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MAY, 1975

ORLANDO, FLORIDA 32816



PEGASUS was the winged horse of the muses in Greek Mythology. He carried their hopes, their aspirations, and their poetry into the skies. PEGASUS is as futuristic as tomorrow's space exploration in our solar system and into the universe beyond. The seal also bridges the gap between the humanities and space technology.

Florida Technological University reserves the right to change without notice any of the materials — information, requirements, regulations — published in this Bulletin.

ACCENT ON THE INDIVIDUAL and ON EXCELLENCE

Florida Technological University is an Equal Opportunity Employer.

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This public document was promulgated at a cost of \$38,327.00 or \$.96 per copy to acquaint the student with the program of study and the cost of attending the university.

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ADMINISTRATION

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Jimmie A. Ferrell, M.S., *Coordinator of Student Organizations*
James W. Gracey, M.S., *Director of Placement*
Kenneth D. Lawson, Ph.D., *Director of Village Center*
Paul R. McQuilkin, Ph.D., *Dean of Men*
Ken H. Renner, M.P.H., *Director of Intramurals and Extramurals*
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Freeman L. Goff, M.Ed., *Director of Housing Operations*
Carol P. Wilson, M.B.A., *Dean of Women*



WHERE TO GO FOR ANSWERS

AD — Administration Building

LR — Library Building

VC — Village Center

RH — Residence Hall

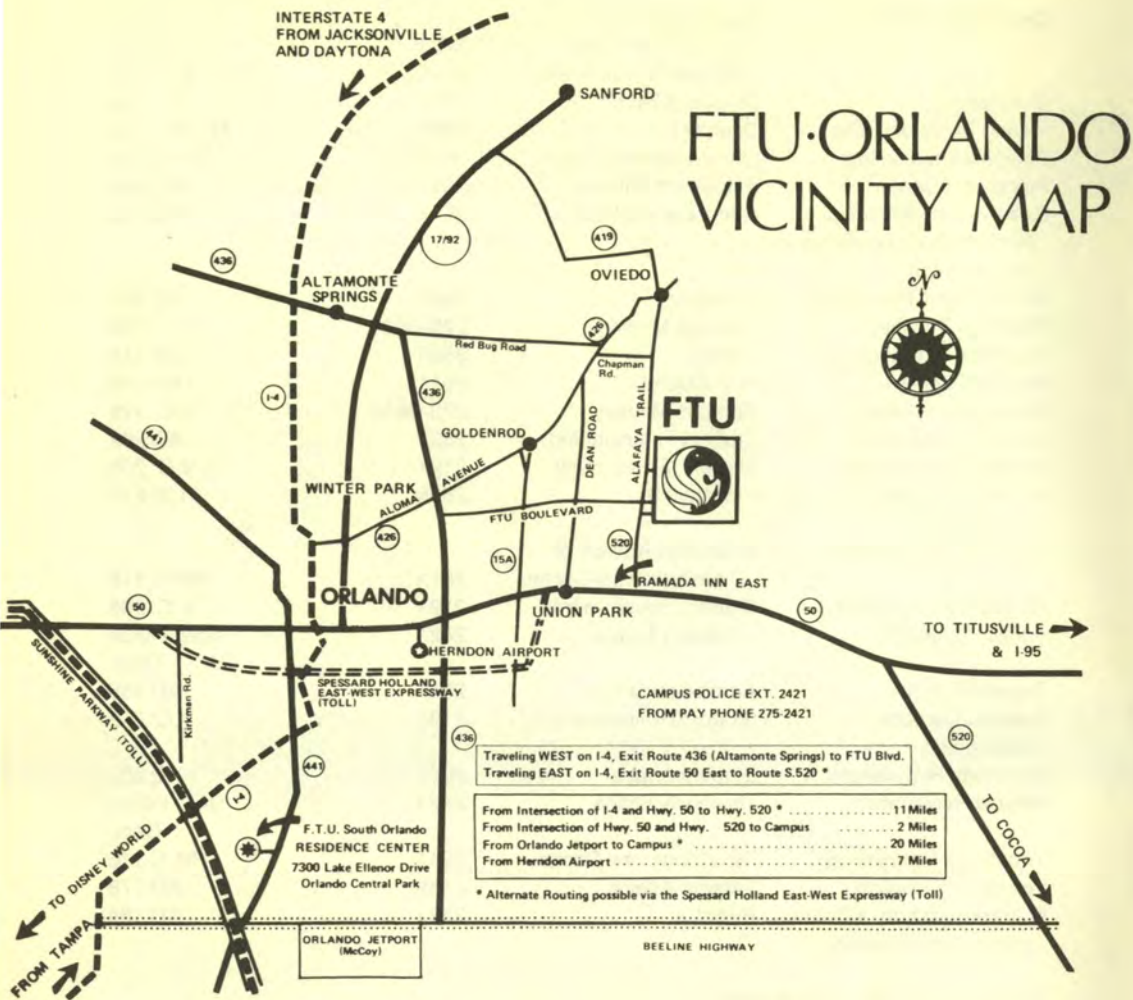
questions regarding	place to call	phone	office location
Academic Matters	Academic Advisor		
Academic Status	Registrar	2531	AD 165
Admission, Graduate or Undergraduate	Admissions	2511	AD 165
Add, Drop, or Change Courses	Registrar	2531	AD 165
Books, Supplies, and Sundry Items	Bookstore	2500	LIB B-3
Borrowing Books from another Library	Library	2561	LIB 4th floor
Cashing a Check	Cashier	2881	AD 108 & 109
Checking out Books	Library	2580	LIB 1st floor Desk
Checking our Phonograph Records	Library	2571 2580	LIB 4th floor
CLEP Credits	Academic Advisor		
Clubs & Organizations	Director for Student Organizations	2766	AD 268
Cooperative Education	COOP Office	2301	AD 118
Credit by Exam	Dean of Appropriate College		
Dead Auto Battery	University Police	2421	Bld. 17
Equipment Checkout	P.E. & VC Game Room	2391 2312	P.E. 110 V.C. 185
Extramurals	Extramural Office	2136	V.C. 201
Family Planning	Student Health Office	2701	V.C.
Graduation:			
Application	Registrar	2531	AD 165
Fees	Cashier	2881	AD 108, 109
Cap & Gown	Bookstore	2500	LIB B-3
Positions	Placement Office	2361	AD 225
Course Checkout	Student Advisor		
Health Insurance	Student Health Serv.	2701	V.C.
Help with Reading, Speech, and Hearing	Developmental Center	2811	RH-C 116
Housing	Housing Office	2831	V.C. Main Lobby
Illness	Student Health Serv.	2701	V.C.
Identification Cards	Registrar	2531	AD 165
Intramurals	Intramural Office	2408	V.C. 201
Junior College Relations	Academic Affairs	2301	AD 384
Loans, Scholarships, & Grants	Student Financial Aid	2827	AD 282
Lost and Found	Village Center	2611	Main Desk
Meeting Rooms	V.C. Director	2117	V.C. 198
Opportunities for Student Involvement	Student Government	2191	V.C. 206

Organizing a Club	Student Affairs		
	COORD. for Clubs	2766	AD 268
	Student Government	2191	V.C. 205
Orientation	Student Affairs	2766	AD 268
Paying University Bills	Cashier	2881	AD 108, 109
Personal Counseling	Developmental Center		RH-C 116
Placement Center	Placement Office	2361	AD 225
Readmission following Withdrawal, Disqualification, or Exclusion	Admissions Office	2511	AD 165
Records and Transcripts	Registrar	2531	AD 165
Religious Services	Campus Ministry	273-0610	V.C. 226
Research Assistance	Library	2564	LIB 316
Resident Centers	Admissions	2511	AD 165
Spiritual Counseling	Campus Ministry	273-0610	V.C. 226
Student Employment	Student Financial Aid	2827	AD 282
Student Government	Student Government	2191	V.C. 206
Student Newspaper (FUTURE)	Publications	2606	LIB 215
Test Scores (Admission)	Academic Advisor or Developmental Center	2511	RH-C 116
Tickets (Movie subsidy)	Student Government	2191	V.C. 206
Traffic Violations	University Police	2421	Univ. Police Dept.
Transfer Credits	Admission Officer	2511	AD 165
Travel & Carpool Information	Student Government	2191	V.C. 208
University Regulations	Student Affairs	2821	AD 282
Vehicle Registration	University Police	2421	Univ. Police Dept.
Vocational Counseling	Developmental Center	2811	RH-C 116
Veteran Counseling	Veteran Affairs	2139	AD 278
Withdrawing from a Course or from the University	Registrar	2531	AD 165

When you Cannot find an Answer:

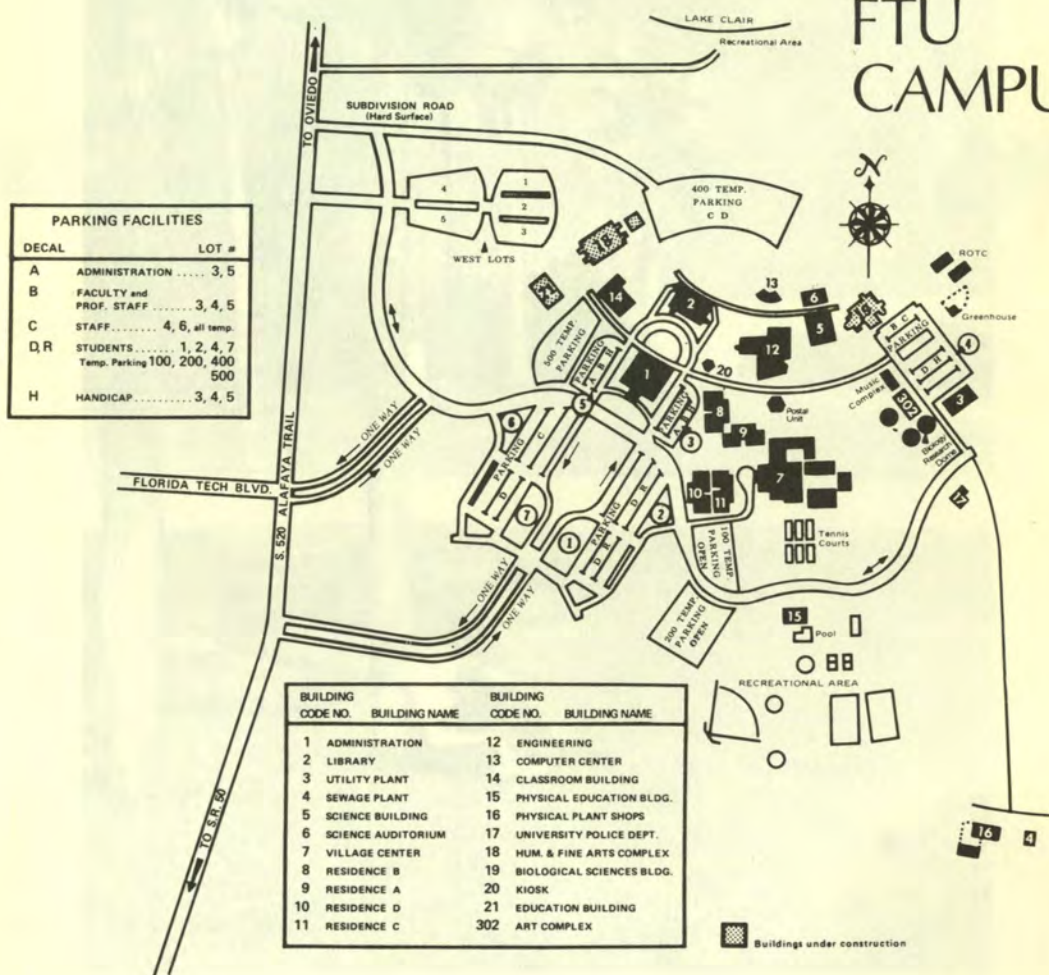
Student Government	2191	V.C. 206
Information Booth	2222	AD Lobby
Dean of Men	2751	AD 277
Dean of Women	2824	AD 279







FTU CAMPUS





ACADEMIC CALENDAR

Spring Quarter 1975

MAY 19-23 (MON.-FRI.)

Educational counseling and student advisement for the Summer Quarter.

MAY 23 (FRI.)

Last day to withdraw from a course or from the University. Last day to change from credit to audit, if passing. Last day to remove an "I" earned last quarter.

MAY 26 (MON.)

Memorial Day holiday (under the 1968 Uniform Monday Holiday Act).

MAY 27, 7:00 am (TUES.)

Classes resume.

JUNE 6, 9:30 pm (FRI.)

Classes end for Spring Quarter.

JUNE 9-12 (MON.-THURS.)

Final examination period.

JUNE 13 (FRI.)

Commencement.

JUNE 14, 12 NOON (SAT.)

Grades due in Registrar's Office.
Academic year ends.

Summer Quarter 1975

MAY 22 (THURS.)

Last day for receipt of **regular** undergraduate and graduate applications. Readmission application and special non-degree registration forms will still be accepted after this date.

JUNE 5 (THURS.)

Readmission applications and non-degree registration forms accepted after this date must pay a late-registration fee.

JUNE 16-19 (MON.-THURS.)

Orientation and advisement for new freshmen and transfer students and advisement for former and current students not pre-advised.

*Resident Center registration see page 12.

MAY 75										
						1	2	3		
4	5	6	7	8	9	10				
11	12	13	14	15	16	17				
18	19	20	21	22	23	24				
25	26	27	28	29	30	31				

JUNE 75										
1	2	3	4	5	6	7				
8	9	10	11	12	13	14				
15	16	17	18	19	20	21				
22	23	24	25	26	27	28				
29	30									

JUNE 19-20 (THURS.-FRI.)

Registration by appointment for the following student classifications: Graduate, current undergraduate, former undergraduate, new undergraduate, post-baccalaureate and other non-degree; faculty and staff will register following the above appointments. Registration will close after the last appointment.

JUNE 21 (SAT.)

Graduate record exam (at designated examination Centers). Registration for examination must be made 4 weeks prior to this date.

JUNE 23, 7:00 am (MON.)

Classes begin for Summer Quarter.

JUNE 26, ENDS 3:00 pm (THURS.)

Last day to adjust class schedule (end of Add-Drop period).

Last day for withdrawal with refund.

Last day to make application for graduation for students who will complete requirements at end of Summer Quarter.

BEGINS 4:00 pm

Late registration. All students will be assessed a late fee: \$25.00 for full-time students, ~~\$10.00 for part-time students.~~

JULY 4 (FRI.)

Independence Day holiday (University-wide)

JULY 7, 7:00 am (MON.)

Classes resume.

*Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

JULY 18 (FRI.)

Deadline for withdrawal without grade penalty. Last day for removing temporary student status.

AUGUST 11-14 (MON.-THURS.)

Educational counseling and student advisement for Fall Quarter.

AUGUST 15 (FRI.)

Last day to withdraw from a course or from the University. Last day to change from credit to audit, if passing. Last day to remove an "I" earned last quarter.

JULY 75												
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AUG 75												
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31												

AUGUST 28 (THURS.)

SEPT. 2, 12 NOON (TUES.)

AUGUST 18 (MON.)

SEPTEMBER 2 (TUES.)

SEPTEMBER 8 (MON.)

SEPTEMBER 8-12 (MON.-FRI.)

SEPTEMBER 15-18 (MON.-THURS.)

SEPTEMBER 16-18 (TUES.-THURS.)

SEPTEMBER 22, 7:00 am (MON.)

SEPT 75												
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28	29	30										

Classes end for Summer Quarter. Final examination given at the discretion of the instructor. Special graduation ceremony.

Grades due in Registrar's Office.

Fall Quarter 1975

Last day for receipt of **regular** undergraduate and graduate applications. Readmission applications and special non-degree registration forms will still be accepted after this date.

Readmission applications and non-degree registration forms accepted after this date must pay a late-registration fee.

Academic year begins.

Orientation and advisement for new freshmen and transfer students not pre-advised.

***Resident Center registration see below.**

Advisement of current and former students not pre-advised.

Registration by appointment for the following student classifications: Graduate, current undergraduate, former undergraduate, new undergraduate, post-baccalaureate and other non-degree; faculty and staff will register following the above appointments. Registration will close after the last appointment.

Classes begin for Fall Quarter.

***Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.**

SEPTEMBER 26, ENDS 3:00 pm (FRI.)

BEGINS 4:00 pm

OCTOBER 17 (FRI.)

OCTOBER 18 (SAT.)

NOVEMBER 11 (TUES.)

NOVEMBER 12, 7:00 am (WED.)

NOVEMBER 17-21 (MON.-FRI.)

NOVEMBER 21 (FRI.)

NOVEMBER 27-28 (THURS.-FRI.)

DECEMBER 1, 7:00 am (MON.)

DECEMBER 5, 9:30 pm (FRI.)

DECEMBER 8-11 (MON.-THURS.)

DECEMBER 12 (FRI.)

DECEMBER 13 (SAT.)

Last day to adjust class schedule
(end of Add-Drop period).

Last day for withdrawal with refund.

Last day to make application for graduation
for students who will complete requirements
at end of Fall Quarter.

Late registration. All students will be
assessed a late fee.

Deadline for withdrawal without grade
penalty. Last day for removing temporary
student status.

Graduate record exam (at designated
examination Centers). Registration for
examination must be made 4 weeks
prior to this date.

Veterans' Day Holiday.

Classes resume.

Educational counseling and schedule
advisement for Winter Quarter (for
currently enrolled students).

Last day to withdraw from a course or
from the University.

Last day to change from credit to audit,
if passing.

Last day to remove an "I" earned last quarter.

Thanksgiving Holidays
(University-wide).

Classes resume.

Classes end for Fall Quarter.

Final examination period.

Special graduation ceremony.

Graduate record exam (at designated
examination Centers). Registration for
examination must be made 4 weeks
prior to this date.

OCT 75						
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NOV 75						
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DEC 75						
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28	29	30	31			

DECEMBER 15, 12 NOON (MON.)

DECEMBER 1 (MON.)

DECEMBER 15 (MON.)

JANUARY 2 (FRI.)

JANUARY 5, 7:00 am (MON.)

JANUARY 9, ENDS 3:00 pm (FRI.)

BEGINS 4:00 pm

DEC 75												
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Grades due in Registrar's Office.
Christmas holidays begin (students).

Winter Quarter 1976

Last day for receipt of **regular** under-graduate and graduate applications.
Readmission applications and special non-degree registration forms will still be accepted after this date.

Readmission applications and non-degree registration forms accepted after this date must pay a late-registration fee.

Orientation and advisement for new freshmen and transfer students, and advisement for current and former students not pre-advised.

***Resident Center registration see page 16.**

Registration by appointment for the following student classifications: Graduate, current undergraduate, former undergraduate, new undergraduate, post-baccalaureate and other non-degree; faculty and staff will register following the above appointments. Registration will close after the last appointment.

Classes begin for Winter Quarter.

Last day to adjust class schedule (end of Add-Drop period).
Last day for withdrawal with refund.
Last day to make application for graduation for students who will complete requirements at end of Winter Quarter.

Late registration. All students will be assessed a late fee.

JAN 76												
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JANUARY 17 (SAT.)

JANUARY 30 (FRI.)

FEBRUARY 23-27 (MON.-FRI.)

FEBRUARY 27 (FRI.)

FEBRUARY 28 (SAT.)

MARCH 12, 9:30 pm (FRI.)

MARCH 15-18 (MON.-THURS.)

MARCH 19 (FRI.)

MARCH 20, 12 NOON (SAT.)

FEBRUARY 23 (MON.)

Graduate record exam (at designated Centers). Registration for examination must be made 4 weeks prior to this date.

Deadline for withdrawal without grade penalty. Last day for removing temporary student status.

*Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

Educational counseling and schedule advisement for Spring Quarter.

Last day to withdraw from a course or from the University.
Last day to change from credit to audit, if passing.
Last day to remove an "I" earned last quarter.

Graduate record exam (at limited number of examination Centers. Registration for examination must be made 4 weeks prior to this date.

Classes end for Winter Quarter.

Final examination period.

Special graduation ceremony.

Grades due in Registrar's Office.

Spring Quarter 1976

Last day for receipt of **regular** undergraduate and graduate applications. Readmission applications and special non-degree registration forms will still be accepted after this date.

JAN 76												
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MAR 76												
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28	29	30	31									

MARCH 8 (MON.)

MARCH 23-25 (TUES.-THURS.)

MARCH 24-25 (WED.-THURS.)

MARCH 29, 7:00 am (MON.)

APRIL 2, ENDS 3:00 pm (FRI.)

BEGINS 4:00 pm

APRIL 23 (FRI.)

APRIL 24 (SAT.)

MAY 17-21 (MON.-FRI.)

Readmission applications and non-degree registration forms accepted after this date must pay a late-registration fee.

Orientation and advisement for new freshmen and transfer students, and advisement for former and current students not pre-advised.

***Resident Center registration see below.**

Registration by appointment for the following student classifications: Graduate, current undergraduate, former undergraduate, new undergraduate, post-baccalaureate and other non-degree; faculty and staff will register following the above appointments. Registration will close after the last appointment.

***Resident Center Registration and Add/Drop dates precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.**

Classes begin for Spring Quarter.

Last day to adjust class schedule (end of Add-Drop period).
Last day for withdrawal with refund.
Last day to make application for graduation for students who will complete requirements at end of Spring Quarter.

Late registration. All students will be assessed a late fee.

Deadline for withdrawal without grade penalty. Last day for removing temporary student status.

Graduate record exam (at designated examination Centers). Registration for examination must be made 4 weeks prior to this date.

Educational counseling and student advisement for the Summer Quarter.

MAR 76						
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23	24	25	26	27	28	29
30	31					

MAY 21 (FRI.)

MAY 31 (MON.)

JUNE 1, 7:00 am (TUES.)

JUNE 4, 9:30 pm (FRI.)

JUNE 7-10 (MON.-THURS.)

JUNE 11 (FRI.)

JUNE 12, 12 NOON (SAT.)

Last day to withdraw from a course or from the University.

Last day to change from credit to audit, if passing.

Last day to remove an "I" earned last quarter.

Memorial Day holiday (under the 1968 Uniform Monday Holiday Act).

Classes resume.

Classes end for Spring Quarter.

Final examination period.

Commencement.

Grades due in Registrar's Office.
Academic year ends.

Summer Quarter 1976

MAY 20 (THURS.)

Last day for receipt of **regular** undergraduate and graduate applications. Readmission applications and special non-degree registration forms will still be accepted after this date.

JUNE 3 (THURS.)

Readmission applications and non-degree registration forms accepted after this date must pay a late-registration fee.

JUNE 12 (SAT.)

Graduate record exam (at designated examination Centers). Registration for examination must be made 4 weeks prior to this date.

JUNE 14-17 (MON.-THURS.)

Orientation and advisement for new freshmen and transfer students, and advisement for former and current students not pre-advised.

*Resident Center registration page 19.

MAY 76													
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16	17	18	19	20	21	22							
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JUNE 76													
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20	21	22	23	24	25	26							
27	28	29	30										

JUNE 17-18 (THURS.-FRI.)

JUNE 21, 7:00 am (MON.)

JUNE 24, ENDS 3:00 pm (THURS.)

BEGINS 4:00 pm

JULY 5 (MON.)

JULY 6, 7:00 am (TUES.)

JULY 16 (FRI.)

AUGUST 9-12 (MON.-THURS.)

AUGUST 13 (FRI.)

AUGUST 26 (THURS.)

AUGUST 31, 12 NOON (TUES.)

JULY 76						
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4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Registration by appointment for the following student classifications: Graduate, current undergraduate, former undergraduate, new undergraduate, post-baccalaureate and other non-degree; faculty and staff will register following the above appointments. Registration will close after the last appointment.

Classes begin for Summer Quarter.

Last day to adjust class schedule (end of Add/Drop period).

Last day for withdrawal with refund.

Last day to make application for graduation for students who will complete requirements at end of Summer Quarter.

Late registration. All students will be assessed a late fee.

Independence Day holiday
(University-wide).

Classes resume.

*Resident center registration and Add/Drop date precede registration and vary with individual centers. RESIDENT CENTER STUDENTS MUST CONTACT DIRECTORS OF THEIR CENTERS FOR ADVISEMENT AND REGISTRATION INSTRUCTIONS.

Deadline for withdrawal without grade penalty. Last day for removing temporary student status.

Educational counseling and student advisement for Fall Quarter.

Last day to withdraw from a course or from the University.

Last day to change from credit to audit, if passing.

Last day to remove an "I" earned last quarter.

Classes end for Summer Quarter.

Final examination given at the discretion of the instructor. Special graduation ceremony.

Grades due in Registrar's Office.

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FLORIDA TECHNOLOGICAL UNIVERSITY

STATEMENT OF PURPOSE

Florida Technological University serves the people of Florida by providing undergraduate and graduate education in all general areas of study and in specifically selected technological and professional disciplines.

Baccalaureate degree programs are offered in humanities and fine arts, social sciences, natural sciences, general studies, business administration, education and engineering. These programs have been developed to assure each student's ability to:

- be perceptive, reason with validity, think creatively, make evaluative judgments and utilize problem-solving techniques;

- understand mankind's heritage, comprehend the present social and physical environment, and contribute toward improving the quality of life in the future;

- communicate effectively with others;

- provide leadership for the improvement of society;

- develop special competence in areas of interest in preparation for a professional career, continued scholarship, and/or further self-development;

- conduct objective self-evaluation and independently act for self-improvement.

Selected graduate programs are offered affording students an opportunity to make professional and/or advanced level contributions in chosen fields of study. Master's degree programs are offered in business administration, education, engineering, biological science, communication, computer science, economics, English, public policy and psychology. A Doctoral program is available in education through a formal cooperative agreement with Florida Atlantic University.

In addition to offering a broad academic program, F.T.U. serves as a center for research and service in east-central Florida.

INSTITUTIONAL PHILOSOPHY

Florida Technological University believes that effective higher education is based on giving individual attention to the special needs of each student in order to guide him in the pursuit of excellence. The Faculty, Staff, and Administration are dedicated to providing each student with individual attention and personal direction in study.

Florida Technological University believes that research is an important part of advanced study and provides its students with the opportunity to conduct research projects or independent study of special interest to them. Many projects exist in which students become directly involved in community service and experience real situations while receiving individual guidance from faculty.

Florida Technological University, in order to better serve the community, makes

higher education easily available to the citizens of east-central Florida through the operation of its off campus resident centers and by offering continuing education and special courses and conferences to the citizens of the region.

This philosophy is best summed up in two basic tenets: first, an ACCENT ON THE INDIVIDUAL, and second, an ACCENT ON EXCELLENCE. Florida Technological University believes in the individual worth of each person who comes in contact with the University and especially encourages THE RESPONSIBLE INDIVIDUAL who strives for EXCELLENCE in every activity.

It is our hope that each individual student will join with others of the University community in striving not just for expansiveness in thought and action but also for excellence.

MASTER PLAN FOR THE CAMPUS AND LOCATION

The campus of Florida Technological University located 13 miles east of downtown Orlando (see map p. 8) consists of 1,227 acres of land, much of which is covered with handsome pine, palm, cypress, cedar, and oak trees. Lakes and ponds contribute to the natural beauty of the campus. Lake Claire covers approximately forty acres and Lake Lee encompasses about fourteen acres. While the campus is in the process of development, every effort is being made to preserve and enhance the natural beauty of the site.

The University opened in 1968 with the first phase of construction representing an investment of about \$8.9 million which included the first phase of the Village Center (Student Union), the Library Building, Science Building and Science Lecture Hall, four Residence Halls and a utilities complex large enough to serve the needs of a small city.

Construction on the second phase of buildings at FTU is complete. The work represents a value of approximately \$6.5 million in modern, functional structures: the 31-classroom General Purpose Classroom Building, the Administration Building, and the massive Engineering Building.

Construction of the third phase includes a \$1.4 million expansion of the Village Center and extension of utilities, a Humanities and Fine Arts Building with adjoining rehearsal hall, and a Biological Sciences Building, for an overall total of \$8.4 million.

Also under construction is a campus childcare center, located in the proximity of FTU Police Headquarters and being built with funds contributed through the Edyth Bush Charitable Foundation of Winter Park and FTU Student Government.

Growth and progress are keys to the continued move forward at FTU. Enrollment in Fall 1974 stood at slightly over 8,800. By 1978, the student body is expected to reach about 10,000.

THE CAMPUS IN 1975-1976

A winding road lined with oak and pine extends from the main entrance of FTU on Alafaya Trail (SR 520) to the heart of the campus. At the center of what some day will be a vast complex of buildings are the huge Library and Administration Buildings. The two are separated by a large reflecting pool. The imposing five-story Library was the first major building completed at FTU. In addition to housing the library, it contains

some classrooms, an instructional media center, language laboratory, radio-TV complex and some faculty offices.

The attractive brick and concrete Administration Building, directly across the pool from the Library, houses the offices of the University President, his three Vice Presidents, the Deans of two of FTU's Colleges, the offices of admissions/registrar, personnel, student affairs, public information, publications, certain key faculty members, and classrooms.

As you look to the right of the Library and Administration Buildings and face east, you see the massive Science Technology Complex that serves as the "headquarters" for the College of Engineering and FTU's Information Systems. Classrooms, laboratories, and several large lecture halls comprise the majority of space in the \$3.4 million Engineering Building.

Adjacent to the Engineering Building is the Science Building, occupied by the College of Natural Sciences. The structure contains classrooms and teaching and research laboratories. The Science Lecture Hall seats 320 persons and also serves as a well-equipped stage for productions by FTU's Department of Theatre.

To the left of the Library and Administration Buildings is the General Classroom Building, which serves, in addition to classroom space, as offices for two of FTU's Deans and for faculty members.

The Village Center, commonly referred to on other campuses as the "student center" or the "student union," is the focal point of much student activity on the campus. Included in the Village Center are food service facilities, indoor recreational areas and equipment, offices for student organizations, the infirmary, a huge Assembly Room with seats for 1,000 persons, student study lounge, exhibit area for art shows and the like, and vast patio areas.

Adjacent to the Village Center are the student housing facilities for single students, consisting of four (4) modern two-story Residence Halls accommodating 414 students; 198 men and 216 women. Two of the Residence Halls are for women and two are for men.

Each suite consists of double bedrooms (a limited number of singles), common living room and bath. In addition, each suite is equipped with functional furnishings, in keeping with the living-study area design, with most of the "creative comforts" of home: carpet, telephone service, central heat, air-conditioning and maid service.

Located in each hall are laundry facilities, a vending machine room, and common social/study lounge for residents' use.

For more detailed information on campus housing please write for the Housing brochure and application:

Director of Housing
Florida Technological University
P. O. Box 26,000
Orlando, Florida 32816

The outdoor recreational facilities are designed to accommodate the physical education academic programs, the organized intramural program, and the informal recreational activities. Available facilities include lighted tennis and handball courts, a flag football-soccer field, a swimming pool, a golf driving range with putting greens, volleyball courts, and a baseball field.

RESIDENT CENTERS

Florida Technological University offers a number of *upper division* and *graduate level* courses at four off-campus Resident Center locations in Central Florida. These are the same courses as are offered on campus and carry the same credit as on-campus courses. Each center is staffed with a Center Director and full-time faculty. Contact the Resident Centers for information as to the current course and program offerings.

FTU BREVARD RESIDENT CENTER

1519 Clearlake Road
Cocoa, Florida 32922
(305) 632-4127

FTU DAYTONA BEACH RESIDENT CENTER

215 South Clyde Morris Boulevard
Daytona Beach, Florida 32014
(904) 255-7423

FTU CANAVERAL RESIDENT CENTER

300 University Drive
Cape Canaveral, Florida 32920
(305) 783-0300

FTU SOUTH ORLANDO RESIDENT CENTER

7300 Lake Ellenor Drive
Orlando, Florida 32809
(305) 855-0881

CONTINUING EDUCATION

These courses are offered for individuals who are not within reasonable commuting distance of the University. Most of the students taking credit courses are employed full-time with business, industry, government, and the teaching profession. Off-campus credit courses are generally taught by the University's regular faculty. In certain instances, highly qualified persons from other educational institutions, as well as from business and industry, provide the instruction. Courses and/or programs are offered by outside requests primarily, although some are scheduled as needs are identified by the University.

NONCREDIT ACTIVITIES

The University is offering an increased number of conferences, institutes, seminars, workshops and short courses which do not carry University credit. These programs, which can be scheduled both on and off the main campus, are developed to meet the educational needs of business, professional, government, service, civic and other groups. Lecturers and discussion leaders come from the faculties of FTU and other educational institutions in addition to highly qualified individuals in various professional areas.

FURTHER INFORMATION

Further information about Florida Technological University's Continuing Education programs and noncredit activities may be obtained by writing to the Office of Continuing Education and Conferences, ADM 374, Florida Technological University, Post Office Box 25000, Orlando, Florida 32816.



COOPERATIVE EDUCATION

Co-Op is a planned, balanced, education program for students who wish to "blend theory with practice" by combining their campus education with work experience.

Students who participate in the Co-Op Program will be able to observe direct relationships between their program of study and their employment. As a result of exposure to the "world of work" and having "put to the test" academic theories, the classroom activities of the students will tend to become more relevant and meaningful. The employment will also provide earnings to help substantially support their education.

The Co-Op Program is based on a format under which the student ordinarily alternates between quarters of study and quarters of employment, which does not necessarily extend his graduation date. The student will be placed with business, industry, or a governmental agency anywhere in the world in a work training assignment related to his academic field of study.

For further information about the Cooperative Education Program, write to Cooperative Education Office, Florida Technological University, Post Office Box 25000, Orlando, Florida 32816, or visit Suite 118 in the Administration Building.



THE EAST CENTRAL FLORIDA AREA

The 1970 population of the East Central Florida region was 922,068. By 1975, according to figures from the East Central Florida Regional Planning Council, population is estimated at 1,229,133. The region is well endowed with a rich heritage of cultural, educational, industrial, and recreational activities.

The public school systems of the area have experienced rapid growth in recent years while maintaining high-quality programs. The several privately supported colleges and public junior colleges have served the higher educational needs of Central Florida, the State, and the Nation for a number of years. Florida Technological University became a part of this group in September of 1968.

The arts flourish in East Central Florida. About 349,000 library volumes are shelved in the Orlando central public library and its eight branches. The Florida Symphony Orchestra, located in Orlando, was the first all-professional symphony orchestra in the State. Each year it presents subscription concerts, as well as pop and children's concerts. The Central Florida Civic Theatre Association has a new theatre near the Loch Haven Art Center. In addition, area theatre-goers are enjoying dinner theatre, the FTU Village Players, and the Annie Russell Theatre productions. There are several art galleries and museums in the area, and there is wide participation in the annual Winter Park Sidewalk Art Festival. Housing one of the South's few such attractions, the John Young Museum and Planetarium presents celestial shows, exhibits and displays, many of them space-age oriented.

There are many reasons for Orlando and Orange County's fantastic growth and development in the past two decades: its strategic location as a transportation hub, the growth of clean, light industry, its ideal climate, its proximity to the Kennedy Space Center, and certainly the many cultural activities.

Although some today refer to Orlando as the ACTION CENTER OF FLORIDA, the city is still the "City Beautiful" to many with numerous parks and flower gardens within its confines. Eola Park, Leu Gardens, Loch Haven Park, Mead Gardens, and the Kraft Azalea Gardens in Winter Park are but a few of the community's many beautiful parks where an array and variety of exotic flowers bloom almost every month of the year. Shopping plazas and stores in the Orlando-Winter Park area run the gamut from modern, air-conditioned malls to quaint boutiques with an Old World atmosphere.

Sports enthusiasts will appreciate the many opportunities for boating, fishing, and swimming. Orlando is the spring headquarters for the American League Minnesota Twins baseball club and the home for the Class A Orlando Twins, a Minnesota farm club. The PGA Citrus Invitational Golf Tournament drawing many top names is held each March at Rio Pinar Country Club, one of a dozen challenging courses in the area. In addition, the Walt Disney World Invitational is a special new feature for golfers.

The world's largest and most famous harness horse training center, owned and operated by the city, is the Ben White Raceway on Lee Road. Tennis, bowling, shuffleboard, sailing, water skiing, jai-alai, dog racing, and most other sports can be enjoyed in the Orlando area regardless of whether a participant's or spectator's viewpoint is desired.

This section of the Bulletin would not be complete without a description of the Florida Disney World. This 43-square-mile complex is located approximately 15 miles

southwest of Orlando and adjacent to Interstate 4. Disney World presently consists of a Theme Park similar to Disneyland in California, but five times as large. Adjoining the Theme Park are motels, hotels, a campsite, plus recreation and entertainment facilities for the entire family.

Sea World opened in December 1973 and Circus World opened its preview center in February 1974.

ACCREDITATION

The graduate and undergraduate programs of the University are accredited by the Southern Association of Colleges and Schools, the official regional accrediting agency for educational institutions in the South. FTU is a member of the Association.

In addition to the regional accreditation agencies, there are a number of scientific, professional, and academic bodies conferring accreditation in specific disciplines and groups of disciplines. Currently, the following areas have been approved by the agencies indicated: Respiratory Therapy by the American Registry of Inhalation Therapists (ARIT); Medical Record Administration by the Council on Medical Education of the AMA; Environmental, Electrical, Industrial, and Mechanical program options in the College of Engineering by the Engineer's Council for Professional Engineers Development (ECPD). All teacher education programs are fully accredited by the Florida State Department of Education.

FTU is listed in Report of Credit Given By Educational Institutions, 1972 (page 24) with an "A" Rating. An "A" rating means "Transcript of record given full value." This handbook, published by the American Association of College Registrars and Admission Officers, shows the acceptability of transfer credits based upon their (AACRAO) evaluation.

FLORIDA TECHNOLOGICAL UNIVERSITY FOUNDATION, INC.

The FTU Foundation, Inc. is a corporate body formed with the primary function of assisting the University financially in the financial aid program, scholarship program and in institutional development. The funds raised by the Foundation for financial aid to students are granted based upon the recommendation of the Director of Student Financial Aid. Requests for assistance should be submitted to the Student Financial Aid Office.

LIBRARY SERVICES

Central to the educational programs at FTU are its libraries. They are designed to provide students with maximum service from the library staff in the pursuit of their education. The collection now numbers almost 200,000 volumes and is growing at a rate of 20,000 - 25,000 volumes each year. Over 3,600 periodical, newspaper and serial publications are now received. The Library is planned as the center of academic activity on the campus, and all books are placed on open shelves to encourage browsing. Small libraries are maintained at the Resident Centers in Cocoa, Daytona Beach and South Orlando.

Microforms play a key role in research today. The FTU Library is unique among American university libraries in offering not only a variety of newspapers, periodicals,

etc. in microform, but also a complete catalog of its book collection on microfiche.

The Library operates on a full schedule of hours, including evenings and weekends. During all hours of opening, a well-trained staff of professional librarians is on duty to provide reference service to the library's patrons. In addition, instruction in the use of the library and its resources is available to the students.

The primary purpose of the Instructional Media Center is to improve instruction. In meeting both the academic and administrative needs of FTU, the Center provides audio-visual equipment and materials, as well as graphic and photographic services in an effort to bridge the gap between technology and instruction. Operated in conjunction with the University Library, the Instructional Media Center provides a wide range of consultative services to aid students and faculty in the fullest possible utilization of its facilities and services.

UNIVERSITY BOOKSTORE

The University Bookstore, located in the basement of the Library Building, carries required textbooks, supplemental books, and associated supplies for all FTU courses. In addition, a complete line of school and art supplies, sundries, paperbacks, gifts, and other items of interest are available. A Customer Service Desk is provided for special orders, such as class rings, etc.

Personal checks, when accompanied by a student I.D. card, are honored for the purchase of books and supplies. Checks for cash in amounts up to \$20.00 will normally be honored by the Bookstore. Students are urged, however, to use the University's Cashier's window in the Administration Building for this purpose.

During the last three days of each quarter, the Bookstore has a "buy-back" period for used text books. Student I.D. cards must be presented for identification.





STUDENT AFFAIRS

INTRODUCTION

The Vice President for Student Affairs is concerned with the education and welfare of students as affected by non-classroom aspects of the total University program; therefore, he coordinates and supervises the non-academic areas of student life. His goals include creating a favorable environment for student learning; personalizing the educative process; encouraging self-discipline, self-direction, and purpose on the part of the individual student; and fostering respect and brotherhood among students and faculty. Assisted by members of his staff, the Vice President for Student Affairs administers programs involving orientation, personal counseling, housing, financial aids, health services, placement, student government, student organizations, Veterans Affairs and special activities. Students are invited to consult the staff of Student Affairs concerning any aspect of campus life.

ORIENTATION

The purpose of orientation at Florida Technological University is to acquaint new entering and transfer students with the various colleges and academic curricula and to assist them in understanding college life. Orientation for the student begins upon the indicated desire to enroll at FTU. Each student receives a number of communications from members of the faculty and administration, and subsequently from the student body, containing advice on academic life, student services, and other campus activities. Information is mailed to students indicating the date on which they are to report for orientation. During orientation students meet members of the faculty and administration. They also receive instructional information to facilitate registration.

HOUSING POLICY

- I. Regularly enrolled single students paying registration fees for a minimum of nine quarter hours may apply for assignment to University residential units. Priority of assignment is given to current residents and new students admitted in good standing. Any single student applicant to the University may request and submit a Housing application on which he/she requests Housing and Food Service for a specific quarter. Priority of room assignments is based on the date of receipt of the completed application in the Housing Office. Applicants should CAREFULLY READ the application before submitting it with the \$25 pre-payment to the Housing Office.
- II. ALL HOUSING CONTRACTS ARE FOR HOUSING AND FOOD SERVICE, combining room and board, and requiring each resident student to participate in one (1) of several available meal plans.

INTERNATIONAL STUDENT SERVICES

The Division of Student Affairs offers basic services for students from other nations. These services include pre-arrival information, assistance in locating housing, counseling on personal, financial, and cross-cultural communication matters, referral to appropriate University and community agencies for needed services, liaison with

the Immigration and Naturalization Service, and other matters that occur from time to time. Contact the Student Affairs Office, Administration Building, 2nd floor, for further information.

STUDENT HEALTH SERVICE

The University is concerned with the physical and emotional health of the student as well as the promotion of individual and general health in the University community. A Student Health Service is maintained on an outpatient basis for routine and emergency health needs, to promote health education, and to protect the Student Body from communicable diseases. It is staffed by medical doctors and registered nurses when classes are in session. Medical care in the students' living quarters is not provided. Every health fee paying student is automatically covered by insurance for the quarter enrolled and the program is administered by the Student Health Service. The insurance program for students is based upon the primary utilization of the Health Service from which referrals will be made in the more serious cases. These cases will be referred to the student's choice of local physician.

Blood is available for students, staff, faculty and their immediate families by notifying the Student Health Services of such need.

Medical records are confidential communications and will be treated as such in so far as the law permits.

In the event of an on-campus emergency, contact University Police for assistance to the Student Health Service.

STUDENT FINANCIAL AID

PURPOSE

Florida Technological University subscribes to the principle that the purpose of financial aid is to provide assistance to students who, for lack of funds, would otherwise be unable to attend college. Financial aid is awarded according to each individual's need in relation to college costs. Awards may come from one or any combination of the following: scholarships, grants, loans, and part-time employment. Our financial aid staff is dedicated to the principle that each student should receive personal attention with complete confidentiality. Every effort is made to provide financial counseling by experienced, considerate personnel.

APPLICATION

Each student desiring to receive student financial assistance must annually submit a separate Florida Technological University Student Financial Aid Application. For information or an application, please contact Florida Technological University's Student Financial Aid Office or your counselor's office if attending school in Florida. For your application to be considered on time, you must submit it between December 15 and May 1 for the academic year beginning the following September. All applications received after May 1 will be accepted conditionally. In addition to the FTU application, parents or guardians or the independent student must complete a financial statement. Upon completion, this statement should be mailed directly to the College Scholarship Service or the American College Testing Service. *The fact that a student is married does not preclude parental support.* These forms may be obtained from your high

school or junior college counselor or from this office. Receipts of an award does not automatically renew an application for subsequent years. Consideration for assistance is based on availability of funds and the parents' or students financial condition. The amount of available funds from federal, state, and local sources is not always known, therefore, some awards are extended on a tentative basis initially. If you receive assistance from sources other than the Student Financial Aid Office, your award may be adjusted. Applicants who fail to notify this office of assistance from other sources are subject to complete withdrawal of aid.



ESTIMATED EXPENSES — 1975 - 1976 ACADEMIC YEAR (THREE QUARTERS)

STUDENT BUDGETS

Expense Categories	On-Campus Undergraduate	Commuter Undergraduate
*Fees (In state)	\$ 585	\$ 585
Books/Supplies	225	225
Housing	510-590	510-590
Food Service	615-975	615-975
Miscellaneous	240	360
Clothing & Laundry	200	200
Transportation	250	550
	<hr/>	<hr/>
	\$2,625-3,065	\$3,045-3,485

*Graduate Fees are \$742.50.

Note: Add \$1,080 for non-Florida residents.

FINANCIAL ASSISTANCE PROGRAMS

Available at Florida Technological University

LOANS

FEDERALLY INSURED STUDENT LOAN PROGRAM (GUARANTEED STUDENT LOAN PROGRAM): This federally sponsored program provides insurance for long-term, low interest loans made by authorized lenders (banks, savings and loan associations, credit unions, pension funds and insurance companies.) The maximum loan available for undergraduates or vocational students is \$2000 per academic year or \$7500 during the undergraduate studies. Graduate or professional study students may borrow a maximum of \$10,000, although some state programs may not authorize loan amounts of this size. Any student, whose adjusted family income is less than \$15,000 will automatically qualify for federal interest benefits. However, the maximum loan may never exceed the cost of education less other financial aid received. For students eligible for interest benefits, the federal government will pay to the lender the total interest due prior to the beginning of the repayment period. Students not eligible for federal interest benefits may still apply for a loan but will have to pay their own interest prior to the beginning of the repayment period. During the repayment period, all students will be responsible for paying total interest charges. Applications for this loan may be obtained at the lending institution or at the Student Financial Aid Office.

FLORIDA INSURED STUDENT LOAN PROGRAM: This combined State of Florida, federal government program provides long-term, insured loans to students who have made application through the Student Financial Aid Office and have adjusted family incomes of less than \$15,000. The maximum amount of a loan for an academic year is \$2000. Applicants must be U.S. citizens and must have been bona fide residents of Florida for one year. Students must be admitted to FTU in good standing and must maintain normal progress.

FLORIDA STUDENT LOAN PROGRAM: This provides for long-term, low-interest (4% simple interest) loans funded by the State of Florida for students who have made application to the Student Financial Aid Office, and demonstrated financial need. Funds advanced on this loan program cannot exceed \$1800 per academic year, and must be repaid starting six months after graduation or termination of full-time student status. To be eligible for this loan, a student must have lived in Florida for one year, and be a U.S. citizen.

LAW ENFORCEMENT EDUCATIONAL LOAN PROGRAM: Applicants who are full-time in service law enforcement officers, and who desire to seek a career in law enforcement, may apply for these long-term loans which carry a 7% simple interest rate per annum, and are repayable over a maximum of a 10 year period. A maximum of \$2200 per academic year may be borrowed by eligible students. Service as a full-time officer or employment with a public funded law enforcement agency will cancel the principal amount of the loan plus interest at the rate of 25% per annum, for each completed year of employment in law enforcement. The student's program of studies must lead toward a certificate or a degree in a program related to law enforcement. The student must complete the following application forms, all available in the Financial Aid Office: Faculty-advisor interview certification, FTU application for financial aid, and the LEEP 3 student note.

NATIONAL DIRECT STUDENT LOAN PROGRAM: This provides a long-term, low interest program of loans to students who have been admitted to the university who show proven financial need and who remain in good standing. The maximum loan is \$5000 for the student's undergraduate career, and the maximum loan for a single academic year may not exceed \$1000. Teachers in school communities with a high percentage of low-income families, as determined by the Department of Health, Education and Welfare, are entitled to cancellations of their loan principal. All recipients of this loan are required to arrange an exit interview with the University Cashier during their last quarter at this university. Payment of these funds begins twelve months after attending classes for at least half time study, and may extend over a ten year period. Assignment in the Armed Service, Peace Corps or Vista lasting up to three years, allows deferment for repayment of principal and interest.

STUDENTS REGENT FEE LOAN: This long-term loan, authorized by the Board of Regents, utilizes student fees and is administered by the Financial Aid Office. Students who have a proven financial need are eligible to apply for these funds. Repayment must begin no later than six months after the borrower graduates or ceases to be full-time. The date of graduation or termination of full-time college attendance shall mark the beginning of accrual of interest at an annual 3% rate.

EMERGENCY SHORT-TERM LOAN PROGRAM: These loans, which are limited to full-time students, are available at the beginning of the quarter, and must be repaid before the end of that quarter. The maximum amount for the loan is the amount of the student fees and books. Each loan under this program carries a 2% service charge, and a \$5.00 late charge if not repaid by the contracted due date.

SCHOLARSHIPS

There are a number of philanthropic organizations and private donors that offer scholarships to FTU students.

Eligibility varies according to the qualifications established by each donor and/or the Financial Aid Committee.

Refer any questions you may have regarding eligibility to the Financial Aid Office or to the college in which you are presently, or expect to be, enrolled.

There are four kinds of scholarships available to FTU students:

1. COLLEGE AWARDED SCHOLARSHIPS

These scholarships are awarded annually by the various colleges to students who have maintained a high level of academic achievement while enrolled at FTU. These awards may or may not require proven financial need.

Athletic Service Awards (*Amount varies*) Offered by the Department of Physical Education to students participating in Varsity athletics.

Central Florida Personnel Association (\$225) - Offered to three Business Administration Management majors with a 3.0 minimum GPA.

Dean's Scholarship (*Amount varies*) - Recipients selected by the deans of the various colleges.

Loren O. Evans Memorial (\$250) - Recipient awarded by the College of Engineering.

Florida Engineering Society (\$570) - The College of Engineering recommends one junior and one senior engineering major.

Federal Government Accountants Association - Cape Kennedy Chapter (\$200) - Recipient must be a junior or senior Accountancy major. An essay is required.

Osburn Henning and Company Accountancy Scholarship (*Amount varies*) - Awarded to one junior and one senior accountancy major.

Dr. Gale T. Sperry Scholarship awarded by the College of Humanities and Fine Arts. Recipient must be a Music Major.

Central Florida Ceramic Society(\$204) - Criteria: For art student taking a ceramics course.

Clara Wells Piano Scholarship - Recipient selected by Music Department at FTU.

Colleen Rhea Brown Memorial (*amount varies*) - Criteria: Open to women of junior or senior standing majoring in secretarial services or Business Education. Award to be made in Winter Quarter. Recipient chosen by Dean, College of Education.

Florida Engineering Society Junior and Senior Award (\$100) - The College of Engineering recommends one junior and one senior engineering major.

Gerald C. Ward Academic Achievement Fund (*amount varies*) - Criteria: Presented annually to the Bachelor of Science in Engineering degree student with the highest GPA in FTU course work. Recipient recommended by Dean, College of Engineering.

Dr. P. Phillips Foundation Scholarship (*amount varies*) - Criteria: Athletes; preference to wrestlers. Recommended by Chairman, Physical Education.

Florida Engineering Society Graduate Student Fellowship(\$600) - Criteria: Graduate student in Engineering, chosen by Dean, College of Engineering.

Mullin Memorial Scholarship(\$600) - Criteria: Major in communicative disorders, proven financial need, selection of recipient by Dean, College of Social Sciences.

William Beardall Scholarship (*amount varies*) - Recipient must be candidate for University baseball team. Selection to be made by Director of Physical Education.

2. CONCURRENTLY AWARDED SCHOLARSHIPS

These scholarships are available to students who have maintained a high level of academic achievement and qualify for financial assistance. The recipients are selected through the cooperative effort of the various colleges and the Student Financial Aid Committee.

William Beardall Scholarship (\$540) - Recipient must maintain a 3.0 GPA and be on the FTU baseball team.

William B. Calkins Scholarship (\$200) - Students with proven financial need from the immediate Central Florida area, are selected from each college and graduate school as recipient.

Delta Kappa Gamma Scholarship (\$200) - Awarded to an Orange County resident, preferably a transfer student from Valencia Community College.

Honeywell Information Systems, Inc. Scholarship (\$570) - Awarded to a minority group member majoring in computer science.

Merlin Mitchell Scholarship (\$750) - Awarded to a student majoring in a field related to conservation.

Red, Red Rose Scholarship (\$100) - Recipients must be a Valencia Community College transfer student.

Rotary International Foundation Scholarship (1 year sponsored) - Awarded to a graduate student interested in studying abroad. Outstanding seniors are considered. Must have a language proficiency.

Florida Bankers Educational Foundation (\$600) - Recipient selected by donor.

Sigma Alpha Iota Scholarship - Criteria: Musical ability, personal merit, character, dedication and proven financial need.

Space Congress Scholarship (\$570) - Recipient selected by donor.

Tom Wiley Scholarship (\$750) - Student in management or business administration. Outstanding academic ability and proven financial need. Recommended by Dean of College of Business Administration.

3. STUDENT FINANCIAL AID AWARDED SCHOLARSHIPS

These scholarships are awarded to students who have maintained a high level of achievement and qualify for financial aid. The recipients are selected by the Financial Aid Committee.

Orange County Association of Educational Secretaries Scholarship (\$570) - Recipient must be a junior Business Education major.

John E. Stonington, Jr. Scholarship (\$750) - Awarded to a graduate of Winter Park High School with outstanding leadership qualities.

Student Government Scholarship (Amount varies) - FTU students are awarded these scholarships annually.

Winter Park Coterie Club (\$500) - Recipient must be a qualified Winter Park resident, a freshman, and show strong academic ability.

College Park Business and Professional Women's Club (\$200) - Criteria: Female, academic ability, financial need, preference to business major, though not mandatory.

Jean Cozzen Combs (amount varies) - Criteria: Students majoring in English. Selection to be made by Student Financial Aid in consultation with Chairman of English Department.

Mid-Florida Women's Traffic Club (\$380) - Criteria: Female, majoring in business administration or marketing.

Scottish Rite Foundation of Florida (\$250) - Criteria: Financial need.

4. CUSTODIAL AWARDED SCHOLARSHIPS

These scholarships are awarded to students selected by an off-campus agency or custodial donor. The Student Financial Aid Office disburses the award quarterly or annually according to the wishes of the donor. The Student Financial Aid Office is not

involved in making the final selection.

Air Force ROTC Program (*Tuition, fees, books and \$100 a month*) Recipient must be a ROTC student with high scholastic achievement.

Air Force Aid Society (\$100 - \$1500) - Awarded to dependents of USAF personnel: deceased, retired, or on active duty. Recipients must be unmarried.

American Business Women's Association (Futura Chapter) Scholarship (\$250) - Recipient awarded by the donor.

Anchor Club Scholarship (\$300) Awarded to Mount Dora High School senior - Recipient selected by donor.

Anderson Air Force Base Officers' Wives' Club, Guam, Scholarship (\$1000) - Recipients selected by the donor.

Charles O. Andrews Memorial (\$1000 for four years) - Applicants must be students of law, business, or athletics and maintain an "A", "B" or a 3.0 GPA.

ARW Scholarship (\$1950) - The recipient may renew this award for the duration of an undergraduate program.

Boise Cascade Safety Achievement Scholarship Plan (\$325) - Recipient must be a dependent of an employee of the Boise Cascade Corporation.

Brecht Scholarship (\$570) - Awarded to a resident of Brevard County.

Brevard County Council PTA Scholarship - Recipient selected by donor.

Canaveral Post Society of American Military Engineers Scholarship (\$300) - Recipients selected by the donor.

Central Florida Ceramics Society (\$51) - Awarded to a student taking a ceramics course.

College Entrance Examination Board Upper-Division Scholarship (\$750) - Recipient selected by the donor.

Corps of Engineers Scholarships (\$100) - Recipient selected by the Corps.

Joseph Curran Scholarship (\$1800) - Recipient selected by the National Maritime Union of America. AFL-CIO.

Delta, Delta, Delta Scholarship (\$1000) - Undergraduate women with proven financial need and contribution to campus life.

Disney Foundation - Employment relation with Walt Disney World.

Florida Concrete and Products Association, Inc. Scholarship (\$500) - Recipient selected by the donor.

Glades Electric Cooperative Scholarship (\$600) - Recipient must be a Florida resident.

Hallbeck Memorial Scholarship (\$500) - Administered by the American Postal Workers Union.

Richard C. Knight Insurance, Inc. Scholarship (\$1000) - Recipient selected by the donor.

Abram W. Lefkowitz Memorial Scholarship (*amount varies*) - Criteria: High school graduate of Orange, Seminole, Osceola or Bevard County; Jewish, proven financial need.

Lodi High School Bank Scholarship (\$200) - Recipient selected by the donor.

Martin Marietta Corporation Foundation Scholarship (\$1500) - Employment relation with Martin Marietta Corporation.

National Association of Secondary Schools - Principals' Scholarship (\$1000) - Recipient awarded by the National Honor Society.

National Merit Scholarship (\$100 - \$1500) - Recipients must have a superior score on a qualifying exam.

Naval Training Center Scholarship (\$880) - Recipient awarded by the Naval Training Equipment Center.

Navy Relief Society Scholarship (*Amount varies*) - Recipients must meet committee standards.

Nina Haven Charitable Foundation - Recipient selected by donor.

Lou and Lilliam Padolf Scholarship (\$150) - Recipient selected by the donor.

John Pilkington Scholarship - Recipient selected by the donor.

Quota Club of Orlando (\$195) - Criteria: To be awarded to a female beginning her junior year in audiology.

Pennsylvania Higher Education Assistance Agency Scholarship (\$414) - Candidates must be in need of assistance as a result of the June floods (1972).

Piper Foundation Scholarship (\$100) - Recipient selected by the donor.

Bert Rodgers School of Real Estate Presidential Award Scholarship (\$500) - Awarded by a Board of Trustees to students interested in specializing in the field of real estate.

Seabee Memorial Association Scholarship (\$400) - Recipient must maintain a better than 3.0 GPA.

Sorosis Scholarship (\$250) - Awarded to a female student by Sorosis.

South Brevard City Panhellenic Scholarship (\$600) - Recipient selected by the donor.

Southern Baptist Convention Scholarship - Criteria: Baptist religion faith, 3.0 overall GPA, completing sophomore year or above, majoring in communications and planning a career in radio, television or film.

Titusville City Panhellenic Scholarship - Criteria: Titusville area girl attending accredited college of university.

Winn-Dixie Stores Scholarship Foundation (\$500) - Recipient must be an employee of the Winn-Dixie Company.

Women's Club of Winter Park Scholarship (Amount varies) - Recipients are chosen by the Women's Club Committee.

Women Marines Association Scholarship (\$500) - Recipient is selected by the Women Marines Association.

Zeta Tau Alpha Foundation Scholarship - Preference given to senior women members and non-members of the fraternity with a 3.0 GPA.

GRANTS

BASIC EDUCATIONAL OPPORTUNITY GRANT PROGRAM: This federally designed program provides assistance to financially needy students. The maximum awarded funds under this program cannot exceed \$1400, minus the amount you and your family can contribute toward the cost of education. A minimum grant of \$200 may be awarded to eligible students. Availability of the funds for the program, the family contribution and the cost of the student's education determine the amount of the grant, which cannot exceed one-half the cost of the student's education. Eligibility requirements for applicants include that students must be enrolling for the first time in a post high school program at an eligible college, university, vocational or technical school after April 1, 1973. Students must be in full-time attendance, and the student must be a U.S. Citizen, or must be in the U.S. for other than a temporary purpose and intend to become a resident. Application forms are available in the Student Financial Aid Office.

FLORIDA STUDENT ASSISTANCE GRANT: This grant program, sponsored by the State of Florida, is designed to provide assistance for qualified students who show exceptional financial need. Priority in making awards from available funds is given to entering freshmen, junior college transfers, and other applicants in that order. Applications may be picked up in the Student Financial Aid Office after January 1.

LAW ENFORCEMENT EDUCATION GRANT: This grant program which awards funds to in service law enforcement officers without regard to their financial need, supplies funds for tuition, fees and books only not to exceed \$250 per academic quarter. The program is restricted to full-time, in service law enforcement officers of local, state and federal units of government, who may enroll for courses which apply toward the Associate of Arts degree requirements. Students may be part-time or full-time. Grant funds may be advanced only to applicants who enter into an agreement with the Justice Department to remain in the law enforcement field for a period of two years following completion of any course for which grant funds are used. The program is intended to act as an incentive for in service law enforcement personnel to increase their competence and value to their employing agencies through the education process.

NON-FLORIDA TUITION WAIVER: Non-Florida residents possessing skills or abilities which comprise a positive contribution to the university environment may have their tuition waived through the Board of Regents. The university has been authorized by the Board to waive tuition for a limited number of students and may also so assist graduate and foreign students. Contributions may be in the areas of academics, music, drama, and fine arts.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT PROGRAM: Qualified students who are of exceptional financial need may receive assistance under this federal government funded program. Applicants must need and agree to accept an equivalent amount of matching funds from sources such as scholarships, loans, and employment programs. The maximum amount available is \$1000 or one-half the total amount of student financial need. Applicants must be accepted for enrollment or be in good standing as full-time undergraduate students. They must be U.S. citizens, or must live in the U.S. for other than a temporary purpose, and must intend to become permanent residents. Student recipients under this program must maintain normal progress to be considered for additional funds.

EMPLOYMENT

COLLEGE WORK-STUDY PROGRAM: This federally sponsored student employment program provides funds for students who are enrolled full-time, who show evidence of exceptional financial need and who are capable of maintaining good academic standing while employed under the program. The program is designed to allow students to pay part of their educational expenses by working on campus, up to 20 hours per week while classes are in session. Subject to availability of funds, students may work up to 40 hours per week during vacation periods and summers.

ON-CAMPUS PART-TIME EMPLOYMENT (OPS): An estimated three hundred students may work under this state funded program, which has no prerequisite of financial need. Students under this program may work up to 20 hours a week. Work duties vary from basic clerical, or filing, to advanced secretarial or computer programming type employment. The various colleges and departments offer these positions. Application for this type employment may be initiated in the student's college or in the Student Financial Aid Office.

SUMMARY

All financial aid is dependent upon the availability of resources. To be considered for financial aid, an applicant must be a full-time student with a minimum of 12 hours per quarter, be in financial need, make normal academic progress, and be of good character. An award cannot be made until the applicant has been accepted for admission to Florida Technological University. However, applicants should not wait for notice of acceptance but should apply as soon as possible after November 1. The Office of Student Financial Aid reserves the right to cancel or refuse to renew financial aid to any student who uses these program funds for unreasonable, non-college related expenditures.

PLACEMENT CENTER

Campus interviews and employment contacts are essential aspects of the Placement Center. The provision of these services requires the development of student personnel files and resumes, therefore, seniors are urged to register with the Placement Center three quarters prior to graduation.

All students are invited to take advantage of the career counseling services offered by the Center, and to avail themselves of off-campus, part-time and summer employment opportunities.

DEVELOPMENTAL CENTER

The Developmental Center offers a professional staff of counselors to aid students in selecting vocational-educational objectives, overcoming learning difficulties, solving problems of personal-social adjustment, developing speech or hearing skills and dealing with marital and other relationship problems. A full range of tests is available along with an occupational library, developmental reading and study skills training, and a speech and hearing service.

Any student may request the assistance of the Center whenever he feels the need. He might, for example, desire increased understanding of himself and his relationship with others or he might seek to gain additional satisfaction from his learning experiences. Tests are often used to help the individual student evaluate his own interests, aptitudes, and abilities. The services of the Center are voluntary and all aspects of counseling are confidential.

STUDENT ACTIVITIES

Personal development may, in part, be enhanced through informed, experienced, dedicated University and community participation. Frequently, activities are referred to as "extracurricular," but at Florida Technological University student activities are regarded as a part of the total educational program, a supplement to the individual student's academic program. The University, through student cooperation and with the assistance of student organizations, sponsors a variety of cultural and entertainment programs which will contribute to the student's academic, recreational, and cultural activities. Additionally, ample opportunity to become a member of occupational, professional, social, and honorary organizations is provided. The student plays an important role in determining how much student organizations enhance personal development. It is the desire of the University to appeal to the interests of

students and to provide opportunities for students to become acquainted with fellow students and faculty members.

STUDENT GOVERNMENT

The purpose of the Student Government at Florida Technological University is to represent student opinion; advance the cause of students both socially and academically; promote communication, cooperation and understanding among students, faculty, and administration; suggest improvements necessary for the welfare of the students; and to insure that Student Government shall continue to be used as a democratic instrument of change at FTU.

The Student Government of FTU represents the interests of Students through its executive and legislative branches. The Student Senate is composed of representatives from every college and class. In addition to these elected offices, there are many openings available for appointed offices or on Student Government committees. By active participation in Student Government, or by voicing opinions and ideas through representative legislators, a student may gain valuable experience in the democratic processes — its freedoms and responsibilities. Students interested in working with the Student Government may obtain information from any member of Student Government or from the Office of Student Affairs. Student Government offices are located in the Village Center.



OFFICES OF DEAN OF MEN AND DEAN OF WOMEN

Students are urged to take advantage of the many services and educational programs available beyond the classroom. These services and programs are provided to facilitate learning and supplement academic instruction. The Dean of Men and Dean of Women are available to help students in their attempts to become familiar with these services and activities and to become involved in educational experiences beyond the classroom. The Dean of Men and Dean of Women plan and assist in the development of University programs that provide for the personal, social, and academic adjustment of students. They counsel students for personal, academic, financial and social problems, and as necessary refer students to specialized, professional services. The Deans are the primary contact for students seeking information or assistance in non-academic areas of university operations.

OFFICE OF VETERANS' AFFAIRS

The Office of Veterans' Affairs is designed as a "one stop" center for the veteran who wishes to utilize his veteran's educational benefits in order to further his education. The Office makes available to the veteran a professional staff augmented by student veterans to assist with informing veterans of their entitlements, filing claims to the Veterans Administration, and certifying enrollment at the University.

The Office of Veterans' Affairs conducts an active outreach and recruitment program designed to inform veterans of their educational entitlements and to encourage veterans to continue their education. In addition, the Office makes available professional counseling assistance which utilizes an extensive referral service intended to direct the veteran to community and university agencies equipped to provide assistance in specialized areas such as housing, employment, health, recreation, vocational and technical training, and financial assistance.

Remedial, tutorial, and motivational programs are available to the veteran designed to promote successful fulfillment of educational goals. In this regard, specific programs available to the veteran include reading and study skills training, personalized tutorial assistance provided by an individual tutor, and various seminars concerned with particular aspects of personal development. All veterans and dependents are urged to make contact with the Office of Veterans' Affairs early in the process of applying for admission to FTU.

VILLAGE CENTER

The center of student life on the Florida Technological University campus is the Village Center, a campus-community facility serving students, faculty, University patrons, alumni and guests. It contains food service facilities, conference rooms, art gallery, games area and lounge areas where the student may relax during his leisure moments. Offices for student organizations are located in the Village Center. Under the administration of the Director of the Village Center, many student activity programs are conducted for the social, cultural and recreational interests of all students.

CAMPUS ATHLETICS

Intramural Sports, composed of team, dual, and individual competition on campus are organized into leagues representing students, staff, and faculty. Tournaments are

conducted to determine top teams in each of a variety of activities with trophies awarded to winners. Sports in the intramural program range from flag football and 3-man basketball for male students to powderpuff football and volleyball for the women. There is a total of 18 sports for men, 12 for women, and seven that pair men and women.

Extramurals as the name implies, are a step up in the sports program. Activities are not limited to on-campus competition and are open to students only. These so-called club teams meet regularly with teams from other campuses in and out of Florida. Each program has a qualified coach and also serves as a basis for possible inclusion in FTU's varsity program. For men, there are track, soccer, golf, crew, archery, weightlifting, and swimming. For women, there are the sports of volleyball, basketball, tennis, softball, crew and archery. Additional information on this sports program can be obtained in the Intramural and Extramural Office.

The *Intercollegiate Athletic Program* encompasses four sports — Basketball, Baseball, Tennis, and Wrestling. At least one of these sports is in competition during each quarter of the academic year. Intercollegiate Athletics has grown from a club program in the beginning to a very competitive program with opponents coming from other colleges and universities in the State of Florida and many big name teams from across the nation. The athletic program is in a continual growth pattern, and it is hoped that additional sports may be added on an intercollegiate basis in the near future.



STUDENT CONDUCT

Students are subject to federal and state laws and local ordinances as well as regulations prescribed by Florida Technological University and the Florida Board of Regents. The breach or violation of any of these laws or regulations may result in judicial or disciplinary action.

When a student is involved in an offense resulting in criminal charges, prior to his admission, the circumstances of the case may be reviewed by the appropriate Student Affairs Committee to consider the student's eligibility for admission to the university as well as participation in extracurricular activities.

CLASSROOM RESPONSIBILITY

Students are responsible for maintaining a classroom decorum appropriate to the educational environment. When the conduct of a student or group of students varies from acceptable standards to such an extent that normal classroom procedures are interfered with, the instructor has the authority to remove the offending party from the room.



SCHEDULE OF FEES

A student's basic expenses at the University will be for tuition fees, room and board, textbooks, other instructional supplies, and miscellaneous items.

Required fees are established by the Board of Regents and the Florida State Legislature and are subject to change without notice.

It is required that all University fees be paid at or before regular registration time. University policies do not permit deferring fees or paying by installments during the quarter.

The following schedule applies to all Florida Technological University students:

General Fees and Costs

- A. Application fee (required with all applications for admission to the University and not refundable)\$15.00
- B. Registration Fees per quarter for campus, centers, and continuing education courses.

	Resident	Non-Resident
Undergraduate	\$13.00 per hr.	\$37.00 per hr.
Graduate* & Post Baccalaureate	\$16.50 per hr.	\$40.50 per hr.

*Graduate courses are those numbered 500 or above.

- C. Room and Board (required of student living in University residence halls) per quarter \$375.00 - \$515.00
- Charge for late payment\$15.00
- D. Books and supplies (estimated) per quarter\$50.00
- E. Late Registration (for all students who register after the time provided under the academic calendar)\$25.00
- F. Vehicle Registration (required of everyone operating a motor-powered vehicle on campus) per calendar year for full-time, part-time students, and courtesy students from other institutions. Student's fee\$10.00
- G. Reinstatement Fee (for all students whose registration has been cancelled and reinstatement has been approved)\$25.00
- This fee is in addition to the late registration fee.
- H. Student Health Fee (per quarter)\$8.00

CHECKS

The University will accept personal checks for accounts due to the University. Each student is urged to make his own financial arrangements through his choice of commercial banks. The University Cashier will cash personal checks not exceeding \$50.00.

REFUND OF FEES

A refund of fees will be made under certain conditions upon presentation at the Cashier's Office of a Certification of Withdrawal issued by the Registrar. No refunds will be made under this policy except upon proper application.

- A. Full refund up to the end of the "drop/add" period.
- B. No refund after the end of the "drop/add" period, except:
 - 1. Involuntary call to active military service (full refund less \$2.80 per hour).
 - 2. Death of student (full refund less \$2.80 per hour).
 - 3. When a student contracts an incapacitating illness of such duration and severity as to prevent the successful completion of the academic program for the term enrolled, (Full refund less \$2.80 per hour).
 - 4. Cancellation of the course by the University.

PAST DUE ACCOUNTS

Any, and all, financial obligations to the University must be met by the student if "good standing" is to be maintained. Failure to meet such obligations can result in the withholding of grades and transcripts, and denial of registration and readmission to the University. The services of a professional collection agency; and recourse to the courts may also be invoked if deemed necessary by the University Comptroller. All costs of collection, including attorney's fees shall be borne by the debtor.



ADMINISTRATIVE AND ACADEMIC POLICIES

ADMISSION REQUIREMENTS

FRESHMAN APPLICANTS (First College Attended)

The following classes of applicants are eligible for consideration as candidates for admission to credit courses. Eligibility is subject to satisfactory receipt and review of all items requested in the admissions process. All applicants must have earned 12 high school academic units (i.e., from the areas of English, foreign language, mathematics, science, or social studies).

Graduates of Accredited Florida High Schools who receive no unfavorable character recommendations from officials of their high schools, have an overall average of "C" or better for all academic subjects, and have earned a minimum score of 300 on the Florida State-Wide Twelfth Grade Test.

Graduates of Accredited High Schools Outside Florida and International Applicants who receive favorable character recommendations from officials of their high schools, have grades placing them in the upper 40 percent of their graduating classes, and have acceptable test scores, i.e.:

850 total or higher on the SAT (CEEB) — with no lower than 400 on either the verbal or math portion

20 composite or higher on the ACT

60% or higher on the CQT (Senior College Freshman Norms).

Graduates Possessing a State High School Equivalency Diplomas based upon General Education Development testing and who have acceptable high school records for any portion attended, have acceptable test scores (see above) and, where necessary, favorable recommendations from their schools and/or employers.

Graduates Who Meet Requirements in the First Two Categories Above, But Who Were Graduated from a Regionally Unaccredited High School may enter on provisional admission. By obtaining a 2.0 (C) GPA or better at the end of the quarter during which 12 or more quarter hours are attempted, the provisional status shall be removed.

Graduates Who Do Not Meet These Entrance Requirements and Are Considered Borderline Admission Cases are referred to the University Admissions and Standards Committee for review and possible admission on Academic Warning. It may be recommended that a student attend a Junior College to further his competency and to earn an Associate of Arts degree before reapplying to FTU.

COLLEGE TRANSFER APPLICANTS

Undergraduate students transferring from other colleges or universities into degree programs must have a minimum of 2.0 (C) GPA on all college work previously attempted and be eligible to return to their last previously attended institutions. Should the applicant have less than 2 years (90 quarter hours or 60 semester hours) of transferable college credit, he must meet the University's freshman entrance re-

quirements and, therefore, furnish his high school record and a satisfactory test score.

Credits in which the applicant has achieved a grade of "D" (1.0) or better are transferable. Refer to page 55 for "D" grade transfer policy.

No credit will be awarded for college-level GED tests, for courses given without a grade, nor for courses carrying grades but not credit hours. However, evidence of satisfactory completion will be posted on the student's permanent record.

Completed service school courses may be evaluated on the basis of the recommendations of the American Council on Education when official credentials have been properly presented. Credit may be granted when courses are equivalent to those offered by the University. However, recommendations by the A.C.E. are not binding upon the University, and application for service school course credit should be made at the time of admission.

Graduates from other accredited four-year institutions who apply for admission to work toward a second undergraduate degree must meet the regular requirements of the University (e.g., See Undergraduate Degree Requirements, page 57 and Second Bachelor's Degree, page 71). A baccalaureate degree or higher from another accredited four-year institution satisfies the Basic Environmental Studies Program requirements.

Transfer students from Florida State Junior Colleges or Universities may satisfy the Basic Environmental Studies Program requirements by completing prior to transfer, the general education program prescribed by the junior college or university. Transfer applicants with incomplete General Education Programs (FTU Environmental Studies Program) from state institutions will have their credits evaluated on an individual basis.

1. *Florida State Junior College Transfers.* Admission to the University is normally granted to any graduate of an accredited junior college in the State of Florida who has completed the Associate of Arts program and graduated with a 2.0 GPA based upon all work attempted. Admission Standards for all Florida state-supported universities are established by the Florida Board of Regents.*
2. *Private Colleges and Out-of-State Institutions.* The general education program credits of transfer applicants from private junior and senior colleges and out-of-state institutions will be evaluated on an individual basis.
3. *Unaccredited Colleges or Universities.* Transfer applicants who otherwise meet all requirements, but who are entering from unaccredited colleges (having a satisfactory rating by the American Association of Collegiate Registrars and Admission Officers), may enter on provisional admission. By earning a 2.0 GPA or better at the end of the quarter during which 12 or more quarter hours are attempted, the provisional status shall be removed and any credit to be transferred may be validated.

Regardless of where the student transfers from — a Florida Community College, another Florida University, or another college or university outside the state, it is the student's responsibility to execute the necessary petition(s) in order to determine how his or her courses will transfer with regard to degree progress at FTU. Each College

*Board of Regents Manual pages 2-50 through 2-55.

has different petition procedures but generally the petitioning should be done during the second full quarter of the student's residency at FTU in order that the accepted transfer courses are clearly understood by the student and the faculty advisor early in the student's program.

Final determination regarding applicability of credits accepted in transfer toward the fulfillment of degree requirements resides with the College in which a student is enrolled.

The Admissions and Standards Committee membership is composed of representatives from the faculty, the student body, the Student Affairs' Office and the Admissions Office. This committee meets weekly to review marginal cases and to consider the appeals of applicants.

APPLICATION DEADLINE

Applications for admission should be received 28 days prior to the first day of classes for the quarter in which the student wishes to enroll (consult calendar for exact date). Candidates whose applications have not cleared because of failure to receive supporting documents on time, may be admitted on a temporary basis after consultation with the Admissions Office. Applications for readmission and special, nondegree registrations will be accepted after this date.

RECORDS DEADLINE — All Support Documents

All records requested should be received not later than 15 days preceding the first day of classes, otherwise the applicant may be required to register on a temporary basis assuming it can be determined he or she appears admissible. Records of Temporary Students must be received within four weeks (20 class days) from the first day of classes, or the student may be withdrawn at the discretion of the University Registrar and no fees will be refunded.

RECORDS — Validity of Documents

All supporting admissions documents (e.g., transcripts, health reports, and test scores not recorded on official transcripts) must be received directly from the issuing institution, physician, or testing agency. If the University finds that an applicant has made a false or fraudulent statement or a deliberate omission on his application, residency affidavit or an accompanying document or statement, that student may be denied admission. Should the student be enrolled when such fraud is discovered, he may be immediately withdrawn (with no refund), further enrollment denied, and credit earned and any degree based upon such credit invalidated. Actions for this type of offense will be handled administratively by the University Registrar's Office after notification to the alleged violator and hearing by that office.

READMISSION

Students not in attendance during an academic quarter (exclusive of the summer term) must submit an application for readmission and such other information as may be required, including transcripts of courses attempted in the interim.

Readmission of a disqualified student is not automatic after the mandatory one quarter out. If a student has been disqualified or excluded, he/she must be readmitted by action of the University Admissions and Standards Committee after review of the student's total record.

Any former student who withdrew with a cumulative or overall grade point average of less than 2.0 (C) and who is considered readmissible, will be readmitted on academic warning or academic probation as appropriate.

CONCURRENT ENROLLMENT

Concurrent enrollment in another institution is permitted only when approval to be a **transient** student has been obtained.

SPECIAL STUDENTS

Students of demonstrated academic ability who do not meet the regular requirements for admission may register at FTU.

Qualified high school students seeking admission prior to graduating should refer to **Early Admission, Non-Degree, Transient** and **Audit** sections.

TEMPORARY STUDENTS

Any student who applied before the application deadline date and is permitted to register and attend classes without a complete admission file is granted a maximum of four weeks (first 20 class days), to furnish all required records. Failure to do so, or if records indicate ineligibility, will result in withdrawal at the discretion of the University Registrar and no fees will be refunded.

TRANSIENT STUDENTS

FTU Students. A Florida Technological University degree-seeking student who wishes to earn credit at another college or university must obtain prior approval for specific courses from the Dean or Department Chairman of his respective college and the Registrar of FTU. Credit earned without this transient approval may not be accepted.

Students from Other Colleges or Universities. Students in good standing with a 2.0 overall academic average in any accredited college or university and wishing to enroll for one quarter at FTU may be considered for admission as a transient. Such enrollment terminates at the end of one quarter and does not presuppose regular acceptance by any college or department of the University. A statement indicating the parent institution's willingness to accept the credits earned and that the student is in good standing is required. This statement protects the student and serves as a basis for admission in lieu of transcripts.

AUDIT STUDENTS

University Students. Any degree credit student may be admitted to a class as an auditor with the approval of the chairman of the department in which the course is offered. For degree credit students, a course may be changed from audit to credit

only during the Add/Drop Period and then only with his faculty advisor's consent. Auditors will not receive university credit, nor is the instructor obligated to administer any tests.

No student may change from credit to audit unless passing.

Non-University Students. With the approval of the chairman, any person not enrolled in the University may be admitted to classes as an auditor if the class is not already filled. A simplified application may be completed and registration accomplished at one of the two late registration periods scheduled during the Add/Drop Period. No late fee is required, no university credit is given, and the instructor is under no obligation to give tests to auditors. Those admitted shall pay the normal fees per quarter hour, and no refund is possible after a class has been attended. The University reserves the right to deny admission as an auditor without cause.

CONTINUING EDUCATION STUDENTS

Application registration and payment of fees for those taking a Continuing Education course should be completed prior to or during the first class meeting. When making application to take a Continuing Education course checks should be attached to the Application form and given to the course instructor or forwarded to the Continuing Education Office. The regular institutional calendar will apply to Continuing Education classes.

Students who wish to add or drop a Continuing Education course must do so during the regular on-campus Add/Drop period. Following the Add/Drop period students



may withdraw from a Continuing Education course by completing the standard withdrawal forms.

Students who drop a course any time during the Add/Drop period will receive a full refund of fees. After the Add/Drop period no refund of fees will be made except in instances of:

1. Involuntary call to active military duty.
2. Death of a student.
3. Illness of the student of such duration and severity as confirmed in writing by a physician that completion of the term is precluded.
4. Cancellation of the course by the university.

In the first three instances the entire per credit hour charge may be refunded except for \$2.80 per credit hour which is required for collection under bond and trust obligations. Full refund of fees will be made when the university finds it necessary to cancel a course.

NON-DEGREE STUDENTS

An individual may enroll as a non-degree seeking student using a regular application form. Although such students do not have to meet the regular admission requirements of degree seekers, there must be some satisfactory basis for acceptance. A special, non-degree registration form is also available for one quarter only attendance.

In order to change to degree-seeking status, a non-degree student must provide the academic records required of degree seekers. Where necessary, a student may establish a basis for changing to degree status by completing 24 quarter hours of work here with a 2.0 FTU GPA or above. Such students should be cautioned that *no more than 45 quarter hours earned as a non-degree student can be counted towards a degree. Change of status is not automatic. Degree status must be applied for through the Admissions Office.* The student's total record will then be reviewed and a decision made.

INTERNATIONAL STUDENTS

Undergraduate applicants should refer to the Admissions Requirements Section of this Bulletin and graduate applicants to the Graduate Studies Section. In addition, the following is required for admission:

1. International student applications, undergraduate and graduate, must be received at least three months prior to the desired term.
2. Applicants whose native language is not English must submit satisfactory scores on the Test of English as a Foreign Language (TOEFL).
3. Certified English translation of official records showing grades or marks of courses taken, range of passing and maximum marks, and noting successful completion of schooling must be submitted.
4. Applicants must file a financial statement confirming availability of finances for each year of study.

Any additional information or records requested must be furnished before admissions can be final.

MEDICAL HISTORY REPORT

A new student must furnish a Medical History Report on the approved university health form. It must be submitted to and approved by the Student Health Service before registration will be allowed. The Medical History Report form will be mailed to the applicant with receipt for the Application for Admission.

FLORIDA RESIDENCE

For the purpose of assessing registration fees, students shall be classified as Florida and non-Florida. A Florida student is a person who shall have resided and *had his domicile in the State of Florida for at least twelve (12) months immediately preceding the first day of classes of the current term.*

In applying this policy "student" shall mean a person admitted to the institution. If such person is a minor, it shall mean parents, parent, or legal guardian of his or her person.

The word "minor" shall mean a person who has not attained the age of 18 and whose disabilities of minority have not been removed by reason of a marriage or by a court of competent jurisdiction.

The word "domicile" for fee-paying purposes shall denote a person's true, fixed, and permanent home and place of habitation. It is the place where he intends to remain, and to which he expects to return when he leaves without intending to establish a new domicile elsewhere.

The word "parent" shall mean a minor's father or mother or, if there is a guardian or legal custodian of his person, then such guardian or legal custodian.

In all applications for admission by students as citizens of Florida, the applicant, or, if a minor, his parents or legal guardian shall make and file with such application a written statement under oath that such applicant is a bonafide citizen, resident, and domiciliary of the state of Florida entitled as such to admission upon the terms and conditions prescribed for citizens, residents, and domiciliaries of the State.

A non-Florida student is a person not meeting the requirements outlined above. A non-Florida student (or if a minor, his parent or parents) after having been a resident and domiciliary of Florida for twelve months may apply for and be granted reclassification prior to the first day of classes of any subsequent term, in accordance with the provisions of the preceding paragraph. In addition, the application for reclassification must be accompanied by a certified copy of a declaration of intention to establish domicile filed with the clerk of the Circuit Court as provided by Section 222.17, Florida Statutes.

Unless the contrary appears to the satisfaction of the registering authority of the institution at which a student is registering it shall be presumed that:

1. The spouse of any person who is classified or is eligible for classification as an in-state student is likewise entitled to classification as an in-state student.
2. A minor whose parent is a member of the armed forces and stationed in this state pursuant to military orders is entitled to classification as an in-state student. The student, while in continuous attendance, shall not lose his residence when his parent is thereafter transferred on military orders. A member of the armed forces

of the United States stationed in this state on military orders shall be entitled to classification as an in-state student while on active duty in this state pursuant to such orders.

3. No person over the age of 18 years shall be deemed to have gained residence while attending any educational institution in this State as a full-time student, as such status is defined by the Board of Regents, in the absence of a clear demonstration that he has established domicile in the State.
4. Any student who remains in this State when his parent, having therefore been domiciled in this State, removes from this State, shall be entitled to classification as a Florida student, so long as his attendance at a school or schools in this State shall be deemed "continuous" if the person claiming continuous attendance has been enrolled at a school or schools in this State as a full-time student, as such term is defined by the Board of Regents, for a normal academic year in each calendar year, or the appropriate portion or portions of such years, thereof, since the beginning of the period for which continuous attendance is claimed. Such persons need not attend summer sessions or other intersessions beyond the normal academic year in order to render attendance "continuous."

Any student granted status as a Florida student which status is based on a sworn statement which is false shall, upon a determination of such falsity, be subject to such disciplinary sanctions as may be imposed by the president of the university, which sanctions may include permanent expulsion from the State University System or any lesser penalty.

The following categories shall be treated as Florida residents for tuition purposes:

1. Veterans of the United States of America retired with twenty (20) years or more of active military service, including dependent members of their immediate families, who are in Florida at the time of retirement, or who move to Florida within one year following retirement and intend to make Florida their permanent home.
2. Full-time elementary, secondary, and junior college faculty members under contracts in the State of Florida.
3. Full-time faculty and career employees of the University System and members of their immediate families. (This is construed to exclude the spouse of students.)

To establish Florida residence a student applying for admission should complete the residence affidavit on the application form.

To change status from non-Florida to Florida a student must present to the Admissions Office a copy of the Declaration of Intention to Establish Domicile and the completed Residence Affidavit Form. To claim the military exception the student must furnish the Admissions Office a copy of the military orders showing assignment to Florida. A public school official must submit a written statement from his superior as to his public school status. A University employee must submit a statement from his employer as to his employment status.

ORIENTATION AND ADVISEMENT

After the applicant has been advised of his admission, he will be assigned a priority number and time for registration. However, prior to registration, *he is required* to attend a University orientation program to be followed by a conference with his academic advisor. An advisor will be assigned from the department of the student's

major; however, each student will be expected to study the bulletin carefully and will be responsible for meeting the University's requirements as well as those of his own College and major.

Each applicant accepted will be notified by the Student Affairs Division of a definite appointment time for orientation and academic advisement which normally occur a few days prior to registration. At advisement, a proposed schedule of classes will be prepared and approved on an "Advisement and Trial Schedule" form. This form must be presented at registration along with the "Notice of Final Acceptance."

TRANSFER OF "D" GRADES

Credits earned in courses transferred with "D" grades will count towards the credits required for the baccalaureate; however, it is at the discretion of the department or college of the University offering the major as to whether courses with "D" grades in the major may satisfy requirements in the major field.

TIME-SHORTENED DEGREE OPPORTUNITIES

Florida Technological University provides a number of options by which students may shorten the time required to complete the baccalaureate degree. These options permit the university to recognize high levels of academic achievement and acquisition of knowledge prior to or during attendance at the university. Procedures which may be used include the Early Admission Program, the College Level Examination Program (CLEP), the Advanced Placement Program (A.P.P.) and the University Course Credit by Examination.

1. Early Admission Program

Students who have demonstrated exceptional academic ability may be permitted to enroll as students at Florida Technological University any time after completion of the junior year in high school. To be considered for full-time Fall Quarter Early Admission, applicants must have:

- a. Test scores near the top 15th percentile statewide or nationally (FTG - 420 or above, SAT - 1100 or above, ACT - 24 or above).
- b. "A" - "B" grades in high school
- c. A recommendation from the student's high school counselor.
- d. A letter of permission from parents or guardian.
- e. A campus interview to ascertain the student's maturity and ability to adjust to collegiate responsibilities.

Qualified students may dual-enroll on a part-time basis, taking one or two courses while completing their high school program. An interview and letters of recommendation from parents and principal are required.

Students desiring admission prior to high school graduation should contact the Admissions Office for an appointment.

2. College Level Examination Program (CLEP)

Florida Technological University grants university credit for examinations taken under the CLEP program provided the score obtained is at the 50th percentile or above on the National Sophomore CLEP norms.

Florida Technological University will award up to 67½ quarter hours of university credit under the CLEP program. Information on the number of quarter hours of credit to be awarded for

specific CLEP examinations can be obtained by contacting the University Admissions Office.

3. Advanced Placement Program (A.P.P.)

Students who have participated in the Advanced Placement Program in high school and received a score of three (3), four (4) or five (5) on the national examinations will receive from 4 to 8 quarter hours of college credit in each of the appropriate subject areas. Consult your high school guidance counselor or write to the Educational Testing Service, Princeton, New Jersey 08540, for additional information.

4. University Course Credit by Examination

Regularly enrolled *undergraduate students at Florida Technological University may obtain credit for specific university courses through Departmental Examinations. Those who feel they have acquired the knowledge and/or skills of a specific university course should contact their advisor and the chairman of the department in which the course is offered to arrange for an examination. Degree credit will be awarded for those courses successfully completed by departmental examination. Credit by examination can not be used to raise a grade in a course previously completed or to reduce the last 45 q.h. of the residency requirement. Permission to take an examination is granted by the Dean of the college in which the course is offered. Standard forms requesting university course credit by examination may be obtained from an advisor or in the department chairman's office.

*Excludes transient and non-degree students.



DEGREE REQUIREMENTS

UNDERGRADUATE

The University graduation requirements must be met by each student who wishes to receive a degree from Florida Technological University.

The minimum bachelor degree requirements for all students are as follows:

A minimum of 180 academic quarter hours credit with at least a "C" average (2.0 GPA) for all course work attempted (both FTU and overall).

A minimum of 90 quarter hours of work taken for the bachelor's degree must be earned in a senior institution.

A minimum of 72 quarter hours of work taken for the bachelor's degree must be taken in 300-level courses or above.

A minimum of (and the last) 45 quarter hours must be earned in residence at FTU. Credit by examination may not be used to satisfy this requirement.

A maximum of 67½ quarter hours in any combination of extension, correspondence, CLEP, Time Shortened Degree and Armed Forces credits accepted by the University may be applied toward an undergraduate degree. The acceptance of credit for degree purposes is subject to review by the college standards committee and may differ from college to college. Additional quarter hour credit may be granted by examination given at FTU.

A student has the option of fulfilling the course requirements for graduation under any single FTU Bulletin in force during his most recent period of continuous attendance. The use of a combination of Bulletins to fulfill degree requirements is not permitted. Should his attendance be interrupted, his continuous attendance would begin with his most recent admission. Summer quarters are not included in determining interrupted attendance. Except for the foregoing, the Administrative and Academic Policies of the current Bulletin will be considered official for graduation. A junior college graduate may elect to use the FTU Bulletin in force at the beginning of his most recent continuous attendance at the junior college, provided his attendance continues uninterrupted including his transfer to FTU.

GRADUATE

The University graduation requirements must be met by each student who wishes to receive a degree from Florida Technological University. To meet minimum master's degree requirements, all students must complete at least 45 quarter credit hours of graduate work, with a minimum average of "B" for all courses attempted. At least one-half of the minimum required course work must be numbered 600 or higher.

Additional degree requirements are specified in this Bulletin in the section on Graduate Studies and in the appropriate sections of the individual colleges offering graduate programs.

All students must take the Graduate Record Examination (GRE), except those students in Business Administration who must take the Admission Test for Graduate Study in Business (ATGSB).

DEGREES OFFERED

ASSOCIATE OF ARTS DEGREE

Florida Technological University students who satisfactorily complete 90 quarter hours of acceptable college work with an FTU and overall grade point average of 2.0, may apply to the Registrar's Office for an Associate of Arts Degree. The required 90 quarter hours must include all of the basic requirements of the Environmental Studies Program and the last 30 credits must have been earned in residence at FTU.

The Associate of Arts Degree is awarded on application only, and an application should be made in the quarter in which the requirements for the degree will be satisfied or any time thereafter prior to the completion of the baccalaureate degree. Once the student has made application for the A.A. degree, the Registrar will notify the Dean of the appropriate college for verification of requirements. When the Registrar is notified of verification he will forward a certificate to the appropriate Dean for signature and forwarding to this degree recipient.

ASSOCIATE IN ARTS CERTIFICATE

A student wishing to transfer to another Florida state university for a program not offered at FTU can have his transcript stamped GENERAL EDUCATION REQUIREMENTS MET if he has completed this university's Basic Environmental Studies* Program of 54 quarter hours with a GPA of 2.0 or better. (See page 75 for program outline).

The State Articulation Agreement between the junior and senior institutions states:

"Once a student has been certified by such an institution as having completed satisfactorily its prescribed general education program, no other public institution of higher learning in Florida to which he may be qualified to transfer will require any further lower division general education courses in his program."

Without the Associate of Arts Degree, but with the above stamp, the student will still be subject to the new senior institution's freshman entrance requirements and may find it to his advantage to remain at FTU until the completion of the 90 quarter hour requirement for his Associate of Arts Certificate. The Board of Regents has stated that:

"Within curricular, space, and fiscal limitations, admission as a junior to the upper division of the State University System institutions shall be granted to any graduate of a state approved Florida community college or SUS institution who has completed a university parallel program and received the Associate of Arts Degree—."

(Note that the student's high school record and his Florida 12th grade score is no longer a criteria for admission.

*Synonymous with general education.

UNDERGRADUATE

The University offers the degrees of Bachelor of Arts, Bachelor of Science, Bachelor of Science in Business Administration, Bachelor of Science in Engineering, and Bachelor of Engineering Technology. These degrees are available in the following Colleges, with major and options or areas of concentration as indicated:

I. BACHELOR OF ARTS (B.A.)

College of Education

Major: Elementary Education

Major: Secondary Education

Specializations: Biology, Business Education, Chemistry, English, Foreign Languages, Mathematics, Physics, Social Sciences, Speech

Comprehensive (1-12): Music, Physical Education, Visual Arts

College of Humanities and Fine Arts

Majors: Art, English, Foreign Languages (French and Spanish only), History, Humanities, Music, Philosophy, Theatre

College of Social Sciences

Majors: Allied Legal Services, Communication (with concentrations in Communicative Disorders, Film, Journalism, Radio-Television, Speech), Criminal Justice, Economics, Political Science, Public Administration, Pre-Law, Psychology, Sociology (with concentrations in Anthropology, Social Work).

II. BACHELOR OF FINE ARTS

Major: Art

III. BACHELOR OF SCIENCE (B.S.)

College of Natural Sciences

Majors: Biological Science (with options in Biology, Botany, Fresh Water Ecology, Microbiology, and Zoology), Chemistry, Computer Science, Forensic Science, Mathematics, Medical Record Administration, Medical Technology, Physics, Radiologic Technology, Respiratory Therapy and Statistics.

College of Social Sciences

Major: Social Sciences

IV. BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION (B.S.B.A.)

College of Business Administration

Major: Business Administration, with areas of Administration, Economics, Finance, Management, Marketing

V. BACHELOR OF SCIENCE IN ENGINEERING (B.S.E.)

College of Engineering

Major: Engineering, with areas of concentration in Civil Engineering and Environmental Sciences, Electrical Engineering and Communication Sciences, Engineering Mathematics and Computer Systems, Engineering Mechanics and Materials Sciences, Industrial Engineering and Management Systems, Mechanical Engineering and Aerospace Sciences, plus other interdisciplinary areas such as Biomedical Engineering, Engineering Design, Engineering Operations, Engineering Physics, Systems Engineering

VI. BACHELOR OF ENGINEERING TECHNOLOGY (B.E.T.)

VII. B.A. OR B.S. MAJOR: GENERAL STUDIES

Offered through the office of the Associate Vice President for Academic Affairs

GRADUATE

Graduate degrees are available in the following colleges:

COLLEGE OF BUSINESS ADMINISTRATION

Master of Arts (M.A.)

Economics

Master of Science (M.S.)

Accountancy

Management

Master of Business Administration (M.B.A.)

COLLEGE OF EDUCATION¹

Master of Education (M.Ed.)

COLLEGE OF ENGINEERING

Master of Science (M.S.)

Master of Science in Engineering (M.S.E.)

Master of Science in Environmental Systems Management (M.S.E.S.M)

COLLEGE OF HUMANITIES AND FINE ARTS

Master of Arts (M.A.)

English

COLLEGE OF NATURAL SCIENCES

Master of Science (M.S.)

Biological Science

Computer Science

Mathematical Science

COLLEGE OF SOCIAL SCIENCES

Master of Arts (M.A.)

Communication

Master of Science (M.S.)

Community Psychology

Industrial Psychology

Master of Public Policy (M.P.P.)

¹The College of Education through a cooperative program offers work leading to a Doctor of Education Degree from Florida Atlantic University. Information about applications, admissions and regulations are available from the College of Education.

REQUIREMENTS FOR TEACHER CERTIFICATION

Before a person can teach in the elementary and/or secondary schools in Florida he or she must be certified by the Florida Department of Education. The certification requirements in Florida include 3 basic components:

I. GENERAL PREPARATION

Courses included in this category are normally classified as general education

(i.e., Environmental Studies Program) courses. A graduate with a Bachelor's degree from an accredited institution shall be considered to have met the General Preparation requirements.

II. TEACHING SPECIALIZATION

Courses included in this category are normally classified as the major area in a student's college program. However, not all college majors are included in the certification laws. Sections 7 through 36 of the Florida Requirements for Teacher Certification, January 30, 1968, describe the major areas eligible for teacher Certification and each section has an outline for any special subject requirements in the Teaching Specialization.

III. PROFESSIONAL PREPARATION

There are two means by which students can complete a program in Professional Preparation. They are:

1. The College of Education Career Teacher Program (i.e., a major in the College of Education).
2. The Alternate Basic Certification Program (i.e., a major in some other college).

Students at Florida Technological University may achieve teacher certification by either of the following methods:

1. Completing the College of Education program whereby students will automatically be eligible for a Florida Teacher's Certificate.
2. Completing a degree program in another college within the University and, at the same time, satisfying all requirements needed for certification.

QUARTER HOURS EXPLAINED

The graduation credit value of each course of instruction is stated in terms of quarter hours. A quarter hour of credit represents one class hour of work (or two or three laboratory hours of work) per week for a quarter.



GRADING SYSTEM

The University will utilize an alphabetic grading system. This system, with a grade point equivalent per quarter hour, is as follows:

A	- Excellent	4 grade points
B	- Good	3 grade points
C	- Average	2 grade points
D	- Passing	1 grade point
F	- Failure	0 grade point
W	- Withdrawn	0 grade point
I	- Incompleted	0 grade point
X	- Audit (no credit)	0 grade point
S	- Satisfactory (with credit)/ Satisfactory Progress (Research, Thesis, or Dissertation)	0 grade point
U	- Unsatisfactory (no credit)	0 grade point
R (followed by grade)	- Subsequently repeated (no credit)	0 grade point

The grade point average (GPA) is the average number of grade points per quarter hour attempted and is computed by dividing the total number of grade points assigned by the total number of quarter hours attempted, less hours resulting from W, X, and I grades. The grade point average for graduation requirements is 2.0 (C) and will be computed on the student's total academic program.

INCOMPLETE GRADE

A grade of "I" (Incomplete) is assigned by the instructor when a student is unable to complete a course due to extenuating circumstances, and when all requirements can clearly be completed in a short time following the close of regular classes. The Registrar's Office must be notified of the appropriate grade to be assigned when requirements for the removal of the "I" have been completed. Failure to complete course requirements by the eighth week of the next successive quarter (that is, during the quarter immediately following that in which the "I" was assigned) may, at the discretion of the course instructor, result in the assignment of an "F" grade. It is the student's responsibility to arrange with the instructor for the removal of the "I" grade. The grade of "I" becomes a part of the student's permanent record if not removed by the eighth week of the following quarter. A student may register for a course in which an "I" was received, but no repeat "R" action will be made on his permanent record.

HONORS

It will be the policy of the University to confer baccalaureate honors recognition at graduation upon those students who attain a grade point average which is in the upper 15% of the range established by all students graduating in the same college during the previous two years. In no case will honors recognition be awarded to a student with a grade point average less than 3.0.

Honors awarded will be:

Summa Cum Laude for those students in the upper 5%.

Magna Cum Laude for those students in the upper 10%, but not in the upper 5%.

Cum Laude for those students in the upper 15%, but not in the upper 10%.

For the purposes of establishing honors criteria, grade point average reference points will be established **annually** for each college at the end of the summer quarter. Grade point average reference points will be determined by ranking graduates of the previous two years in each college and establishing the minimum grade point averages of students ranked in the upper 5%, 10%, and 15%, respectively, in that college. These reference points will be used during the subsequent Fall, Winter, Spring, and Summer quarters to determine who will receive honors recognition at graduation.

To receive honors recognition, students must have completed a minimum of 72 quarter hours at FTU. All FTU and transfer credits (if any), including those received in the quarter of graduation, will be used to determine official honors for entry on the student's permanent academic record. The quarter of graduation will be excluded in determining honors for listing in the commencement bulletin, as it is printed before final grades are reported, and therefore a student qualifying for honors recognition at commencement may or may not qualify for honors on his academic record.

The grade point average required for honors is based on a minimum of 72 quarter hours at FTU, but will include all college credits earned toward the degree prior to the quarter in which the student is graduated.

DEAN'S LIST

The Dean's List is recognition of scholastic honors for students who register for and complete at least 12 Quarter Hours with a 3.4 GPA and no grade less than "C" during a quarter. These students are eligible for the Dean's List according to the following classifications:

Summa cum laude list	3.80 to 4.00 Qtr. GPA
Magna cum laude list	3.60 to 3.79 Qtr. GPA
Cum laude list	3.40 to 3.59 Qtr. GPA

This list will be published by the colleges each quarter.

REPEAT POLICY

FTU Courses. A student may register to repeat an FTU course at any time prior to completion of the baccalaureate degree. Both grades will be recorded on the student's official transcript but only the last grade received will be used in calculating the grade point average. The student must complete a "change of grade" request at the time he reregisters for the course.

Transfer Courses. If a transfer student takes an equivalent course at FTU which was previously completed at another institution, both grades will be utilized in calculating the student's grade point average. However, if the repeat policy of the previous institution permits students to count only the last grade received in a repeated course, a transfer student may wish to repeat the course at the original institution. Under this procedure a revised official transcript must be provided by the previous institution.



SCHEDULE CHANGES — Add-Drop Policy

Add: Students may add a course during the official Add-Drop Period (the first three to five days of each quarter - see calendar). After the add-drop period, no course may be added. Approval of the student's faculty advisor is necessary before any course change. (For Continuing Education courses "Add's" will be accepted up to and including the second class meeting.)

Drop: Students may drop a course during the official Add-Drop Period (the first three to five days of each quarter - see calendar). The fact that the student was enrolled in a class so dropped will not appear on the permanent record. Approval of the student's faculty advisor is necessary before any course change. For withdrawal after the add-drop period, consult the withdrawal Policy.

ACADEMIC STANDING

It is of major concern to the University that each student should make reasonable progress toward his educational goal. A guidance and counseling service is provided to aid all students at all times, but special attention is given when a student is not progressing satisfactorily. Every effort will be made to aid him in the resumption of satisfactory progress.

Acceptable academic standing at the University is reserved for those students who achieve and retain a GPA of 2.0 (C) or higher. A student remains in good standing academically as long as he achieves normal academic progress required for graduation.

STUDENT CLASSIFICATIONS

Students will be classified by level, on the basis of quarter hours satisfactorily earned:

FRESHMAN:	Through 44 hours.
SOPHOMORE:	45-89 quarter hours.
JUNIOR:	90-134 quarter hours.
SENIOR:	135 or more quarter hours, prior to completion of baccalaureate requirements.
POST BACCALAUREATE:	Any student enrolled in courses, regardless of course level, who has a baccalaureate degree but has not been admitted to a graduate program.
GRADUATE:	Any student enrolled in graduate courses who has been admitted to a graduate program.

Other student classifications are as follows:

AUDITOR:	A student registered for any credit course who is not seeking credit.
CO-OP STUDENT:	<p>A student enrolled in the Cooperative Education Program is a full-time student during the work training quarter.</p> <p>There is no break in the Co-Op school calendar. The Co-Op student starts his work training quarter the day after the final day of school and continues through the day before the first</p>

day of school for the following quarter. See Veteran's Benefits for Co-Op's.

- SPECIAL STUDENT:** A student of demonstrated academic ability who does not meet the regular requirements for admission (Early Admission, non-degree, transient and auditor).
- TEMPORARY:** A student who applied on time and is permitted to register and attend class pending completion of his admissions file.
- TRANSIENT:** (1) A student registered at Florida Tech with the approval of some other university or college where he is regularly enrolled, or (2) a FTU student temporarily in attendance at another university or college, with the approval of FTU.
- NONDEGREE:** A student earning credit, but not working on a degree program.

VETERAN'S BENEFITS

Veteran-students eligible to receive VA educational benefits must make initial contact with the Office of Veteran's Affairs, Student Affairs Suite, Administration Building, Phone 275-2707.

Undergraduates must carry at least twelve (12) quarter hours for full VA benefits, nine (9) quarter hours for three-fourths VA benefits and six (6) quarter hours for one-half VA benefits. Five (5) quarter hours or less will be reimbursed to the veteran at cost of instruction only. Those students with an undergraduate degree who are classified as post baccalaureate must meet the same criteria as undergraduates. Veteran-students fully accepted in a graduate degree-seeking program are required to carry nine (9) quarter hours for full benefits, seven (7) quarter hours for three-fourths, and five (5) quarter hours for one-half.

Veterans in a Co-Op status can choose to draw VA Benefits for this period of eligibility as follows:

- (1) During on-campus enrollment the use of eligibility time is the same although the allowance is paid based on one-fourth, one-half, three-fourths, or full-time status. No allowance, or the use of eligibility time, occurs during the off-campus Co-Op work training quarter.
- (2) A Co-Op Veteran may elect to accept eighty percent (80%) of his VA Benefit Allowance for each calendar month of a yearly basis. Although this option does not extend a veteran's eligibility time, it does pay all benefits except twenty percent (20%) providing he is enrolled for the minimum number of credit hours to qualify for full-time benefits during his on-campus quarter.

ACADEMIC STANDARDS FOR LEADERSHIP

To be eligible for any position of leadership or responsibility in any recognized student governing group, organization, publication, or activity on campus, a student must:

1. Be enrolled for a minimum of nine hours each term during the academic year and must be a degree-seeking student. The President and the Vice President of the Student Body may take a minimum of seven hours each quarter;
2. Have a cumulative GPA and an FTU GPA of at least 2.0;

3. Not be on academic probation or under the disciplinary actions of restrictive probation, suspension, or expulsion.

An application for appeal due to an extenuating circumstance can be obtained from the Office of the Dean of Student Affairs.

ACADEMIC TERMS AND ACTIONS DEFINED

Quarter Average	Grade Point Average on work attempted during any given quarter.
FTU Average	Grade Point Average on all work attempted while in attendance at Florida Technological University.
Overall Average	Grade Point Average on all work attempted since entering college, including work from all previously attended institutions.
Academic Warning	First action taken when a student's FTU overall GPA drops below 2.0. An FTU student is placed on Academic Warning only once. Subsequent action will be Academic Probation.
Academic Probation	Action taken if a student on Academic Warning does not achieve a 2.0 GPA or better in the subsequent quarter. This action is also taken when a student who has previously been on Academic Warning lets his overall or FTU GPA drop below 2.0. Academic Probation will continue until such time as the student's overall and FTU GPA reaches 2.0 or better.
Disqualified	A student on Academic Probation is Disqualified when he fails to achieve a 2.0 GPA during the subsequent quarter. A student who is Disqualified may not enroll at the University for one quarter following disqualification. <i>Readmission after the mandatory one quarter out is not automatic.</i> A disqualified student must apply for readmission. His total record will then be reviewed and action on his readmission taken by the University Admissions and Standards Committee.
Exclusion	If a student is readmitted after an appeal to the Admissions and Standards Committee following disqualification and still fails to achieve a 2.0 GPA, he is excluded from the University. Exclusion implies permanence and has no time limit.
Appeal	Every student has the right to Appeal any of the preceding for academic actions either in person or in writing. The Appeal should be made to the Admissions and Standards Committee. Contact the Director of Admissions for procedure.
Readmission	If a student has dropped out of the University <i>for any reason</i> , he must reapply on the appropriate form 28 days prior to the quarter he wishes to reenter.

First time FTU students may be admitted on either Academic Warning or Academic Probation at the discretion of the Admissions Officer or the Admissions and Standards Committee. Academic Warning and Probation are intended to inform the student making unsatisfactory progress of his need to alter study habits and to seek additional counseling. Early recognition will indicate to the student and to his parents the possible jeopardy to his academic goals, and will also allow an opportunity to demonstrate acceptable performance.

EARNING CREDIT WHILE DISQUALIFIED OR EXCLUDED

A student disqualified or excluded while a Freshman or Sophomore and who subsequently receives an A.A. degree (with a 2.0 average on all college work attempted) from an accredited State of Florida junior college may be readmitted to the university with credit earned accepted in accordance with standard University policies.

In all other instances, during the quarter immediately following disqualification from Florida Technological University, a student should observe his suspension and may not earn credit toward a degree at FTU by taking credit in residence at another institution or through any extension or correspondence courses.

A student who attends other colleges or universities after the period of disqualification has elapsed will be classified as a transfer student and his readmission will be based on his total educational record.

WITHDRAWAL POLICY - From a Course (After Add-Drop Period) or from the University.

In order to withdraw from a course after the add-drop period, the student must have the approval of his faculty advisor and the instructor. Withdrawal forms may be obtained from and must be returned to the Registrar's Office.

A "W" grade will be entered for a student who withdraws prior to the end of the fourth week of classes. A "W" will be entered for a student who withdraws while passing after the fourth week. An "F" will be entered for any student who withdraws while failing after the fourth week. A student who ceases to attend a class or the university without approval at any time prior to the reporting of final grades will receive a grade of "F" in the course or courses so dropped.

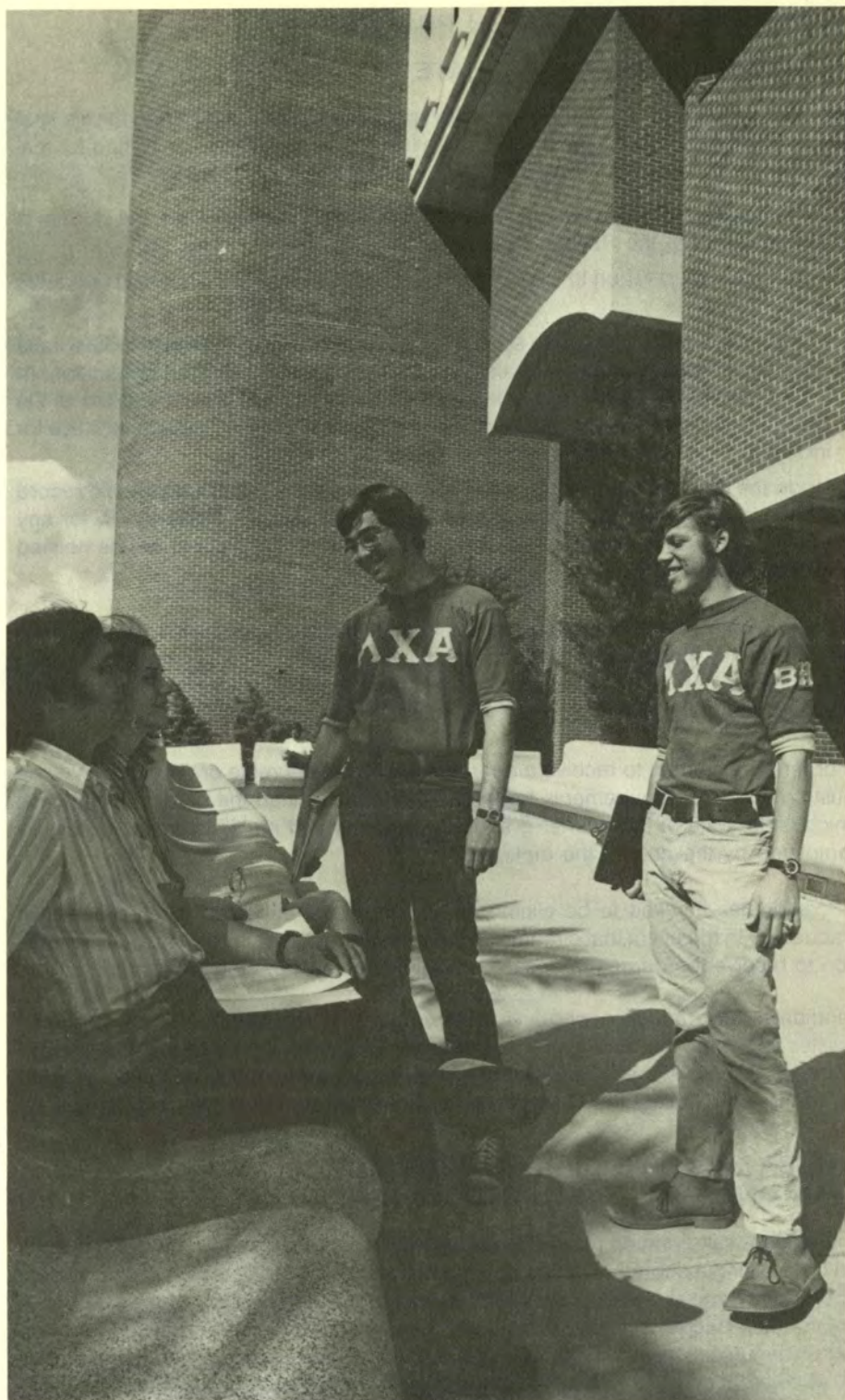
Students may not change from credit to audit after the fourth week unless passing the course to be changed.

Students may not withdraw from a class or from the University or change from credit to audit during the last two weeks of any quarter.

These withdrawal policies apply to part-time as well as to full-time students and are effective whether the student withdraws from one course or from the University.

In order that his record at Florida Technological University may be complete at all times, a student must have a terminal interview with the Dean of the College and the Dean of Student Affairs. Forms for *Withdrawal in Good Standing* may be obtained at the Registrar's Office and must be returned to the Registrar. When these are signed by designated individuals, the student will be entitled to a status of good standing.

A student leaving the University during or at the end of the quarter with financial obligations to the University unfulfilled (for example, library fines, breakage fees, and so forth) will have the statement *Not in Good Standing* entered on the permanent record.



STEPS IN THE GRADUATION PROCESS

UNDERGRADUATE AND GRADUATE

A student should apply to the Registrar for graduation before registering for his final quarter of attendance and not later than the last day of the Add-Drop Period for that quarter.

Upon completion of 150 undergraduate quarter hours of course work, the student is notified to report to the Registrar's Office.

1. The student must report to the Registrar's Office to complete an Intent to Graduate Form.
2. The candidate is requested to submit the advisor's copy of the Intent to Graduate Form to his college which will initiate the necessary check sheet for graduation. At the end of the quarter that check sheet will be completed and forwarded to the Dean's Office for his approval. It will then be forwarded to the Registrar's Office for inclusion in the Student's permanent folder.
3. Upon the completion of graduation requirements, the student's academic record will be checked by both the Dean of the College and the Registrar. If, for any reason, graduation requirements have not been met, the student will be notified immediately.

Successful completion of the degree requirements stated in the bulletin under which the student has indicated he wishes to graduate (following the rules stated on p. 57) shall constitute a recommendation of the respective college faculty that the degree be awarded, assuming the student is in good standing in the University.

In order for a student to receive a degree, either baccalaureate or graduate level, he must complete all requirements for the degree no later than the date on the degree which is the date of the quarter graduation ceremony. If an "I" is given, it must be completed by the date of the diploma.

All candidates certified to be eligible for a degree are expected to be present for graduation. In the event that circumstances or hardships prohibit attendance, permission to receive the degree in absentia may be obtained from the Registrar's Office.

Candidates for graduation who anticipate enrolling in any graduate courses should register for, complete, and furnish satisfactory scores on the Graduate Record Examination (GRE), or the ATGSB for business majors, before they will be considered for admission. Contact the Developmental Center to complete this requirement.

ONE BACHELOR'S DEGREE WITH MORE THAN ONE MAJOR (FTU STUDENTS)

Any student satisfying all requirements for two majors that lead to the same degree will have a single degree awarded and the majors will be indicated on his permanent record. Only one diploma is awarded for each degree regardless of the number of majors. (i.e., Bachelor of Arts Degree with majors in Elementary Education, English, and Communication would only be one Bachelor of Arts Degree although the majors are in different colleges.) The 225 hour requirement for two degrees is not a requirement for students meeting the requirements for one degree with more than one major.

A student who returns to complete a second major for the same degree already awarded by FTU will not receive an additional degree but the fact that he has completed an additional major requirement will be entered on his permanent record upon his appropriate application and certification.

MORE THAN ONE BACHELOR'S DEGREE (FTU STUDENTS)

Any Florida Technological University student desiring to obtain two different baccalaureate degrees must meet the requirements for both degrees and earn a minimum of 225 quarter hours.

SECOND BACHELOR'S DEGREE (TRANSFER STUDENTS)

Graduates from accredited four-year institutions who apply for admission to work toward a second baccalaureate degree at Florida Technological University must meet the regular graduation requirements of the major department and the 45-quarter-hour residency requirement.

Each student is responsible for reading and understanding the graduation requirements as stated in the catalog under which he plans to graduate.



GRADUATE STUDIES

GENERAL INFORMATION

The Office of Graduate Studies consists of the Associate Vice President for Academic Affairs/Dean for Graduate Studies, an Associate Dean for Graduate Studies, and a Graduate Council of appointed representatives from each college and the Faculty Senate. The Office of Graduate Studies is responsible for the establishment and subsequent monitoring of minimum University-wide standards concerning graduate admission and matriculation. It also coordinates the graduate programs of the various colleges of the University. Responsibility for the detailed operation of the various graduate degree programs is vested in the individual colleges.

A listing of graduate degree programs is shown on page 60. For particulars concerning individual graduate programs, consult the index for appropriate page referrals.

ADMISSION TO GRADUATE STUDIES

APPLICATIONS

Applications for admission to graduate study may be obtained from the Registrar, or from the Dean of the College offering the program. Applications which appear to meet minimum standards for admission are referred to the Dean of the appropriate College for his recommendation. All applications should be submitted to the Admissions Office.

Applications will not be considered without complete official transcripts showing the last 90 hours of undergraduate courses taken for the baccalaureate degree and all graduate work attempted. All transcripts must be received directly from the Registrar of the institution in which the work was attempted.

ADMISSION REQUIREMENTS

For consideration for regular admission to graduate study an applicant must have a Baccalaureate degree from an accredited institution and meet the following university and program minimum admission requirements:

A. University Admission Requirements

- (1) Either a grade point average (GPA) of 3.0 (4.0=A) for the last 90 quarter hours credited toward the Baccalaureate degree, or
- (2) Quantitative-verbal GRE score of 1000 or higher. Applicants to the College of Business Administration must submit an ATGSB score of 450 or higher in lieu of the GRE.

B. Program Admission Requirements

The applicant must be accepted by the department or administrative unit offering the degree program to which the application is made. **Any degree program retains the right to impose admission criteria above and beyond the University minimums. While the general admission requirements described above apply generally throughout the University, certain additional requirements may be established by the individual Colleges.** Students are expected to familiarize themselves with program admission requirements prior to application.

TRANSFER OF GRADUATE CREDIT

Normally, a maximum of nine quarter credits may be transferred from institutions not within the State University System to FTU for application to a Masters program. A greater number of credits from State University System institutions, as provided for by the current FTU Graduate Policy and Procedure Manual, may be transferred at the discretion of the Dean of the College upon a petition made by the student.

GRADUATE RECORD EXAMINATION REQUIREMENT

Certain graduate programs require applicants to submit scores on the Graduate Record Examination (GRE). Applicants should refer to the appropriate graduate program section for their particular requirements. Satisfactory scores on these examinations are determined by the College to which the application is made.

The GRE is given in October, December, January, February, April, and July, at numerous locations in the United States. To determine the exact dates and most convenient locations, applicants should write to the Educational Testing Service, Princeton, New Jersey 08540, or contact the FTU Developmental Center.

Students applying for admission to graduate study in Business Administration are required to submit scores on the Admission Test for Graduate Study in Business (ATGSB). This test is given in November, February, April, July, and August, at many locations in the United States. To determine exact dates and most convenient locations, students should write to the Educational Testing Service, Princeton, New Jersey 08450, or contact the FTU Developmental Center.

GENERAL REGULATIONS

STUDENT RESPONSIBILITY

The student is responsible for informing himself of all rules, regulations, and procedures required by the Office of Graduate Studies, and the College offering the course or program he is pursuing. Regulations will not be waived or exceptions granted because a student pleads ignorance of the regulation or claims failure of his advisor to keep him informed.

THE TRAVELING SCHOLAR PROGRAM

The University participates in a Traveling Scholar Program, enabling a graduate student to take advantage of special resources available on another campus but not available on his own campus: special course offerings, research opportunities, unique laboratories, and library collections.

A traveling scholar must receive the approval of his own graduate advisor and the appropriate faculty member at the host university, then be formally approved by the graduate deans at the respective institutions.

The scholar will be registered at the host university and pay regular fees there. He will receive a waiver of admission requirements and the application fee of the host university. Credit for work, which is guaranteed, will be recorded at the home university.

Normally, traveling scholars are limited to one quarter of off-campus study. They are

not entitled to mileage or per diem payments but the home university may, at its option continue its financial support in the form of fellowships or graduate assistantships without any work obligation to be discharged at either university.

STUDENT'S COMMITTEE

It is the intent that the student's committee be influential in designing a program for the student; that it should provide continual guidance; and that it should be the principal mechanism for evaluation of the student's progress.

This committee must have at least three (3) members. Members of the committee will be appointed by the Dean of the College in cooperation with the Department or appropriate unit in which the student is enrolled.

STUDENT'S PROGRAM

A total program of study must be established for each student prior to completion of 12 hours of graduate credits or his first quarter of full time work. This program must be developed by the student in cooperation with his committee and should be approved by the appropriate College Dean. A copy of the program and names of the student's committee members will be filed with the Office of Graduate Studies prior to the start of the student's second quarter.

LOADS

Graduate students applying for assistance under Public Law 89-358 (Veterans' Readjustment Benefits Act of 1966) must register for 9 credits per quarter to qualify for certification as a full-time student. Post-baccalaureates must register for 12 credits.

COURSES AND CREDITS

Courses numbered 500-599 are primarily for beginning graduate students and those numbered 600-699 are for graduate students only. At least one-half of the graduation requirements of a minimum graduate program must be at the 600 course level.

GRADES AND SCHOLARSHIP

Acceptable grades for students pursuing graduate study are A and B. A cumulative grade point average (GPA) of 3.0 based on a minimum of the first 12 credits, shall be considered a satisfactory performance. A student whose GPA falls below this value will normally be dropped from the graduate program.

ACADEMIC PROGRAMS

Each college requires work in the Environmental Studies Program in addition to its respective curricula.

ENVIRONMENTAL STUDIES PROGRAM

The Environmental Studies Program presents to each student an opportunity to gain an insight into an organized body of knowledge designed to enhance the student's ability to make intelligent decisions in a world of the future. This program provides the student with an acquaintance of many of the major areas of academic inquiry. It permits the student to make a more meaningful choice of a major and provides insights into areas from which he may select courses for elective credit.

ENVIRONMENTAL STUDIES (69)

BASIC PROGRAM (54)

Communications	10
Composition	

ENG 101	Composition I (4)
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Speech

SPE 101	Fundamentals of Oral Communication (3)
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Communications Options

ENG 103 Exploring Literature Through Writing, ENG 202, ENG 208; or Speech course. (3)

CULTURAL AND HISTORICAL FOUNDATIONS*

11-12

(Select one course from each group)

I. HUM 201	Western Humanities Survey (4)
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II. ART	ART (3-4)
	Any Literature (3)
HIST	History (4)
HUM	Humanities (4)
MUS	Music
PHIL	Philosophy (4)
REL	Religion (4)
THA	Theatre (4)

III. HIST	History (4)
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Mathematical Sciences

7-8

(Select any two)

COMP	Any Computer Science course
PHI 205	Formal Logic I (4)
MATH	Any Mathematics course
STAT	Any Statistics course

*See footnote on page 76.

Social Sciences*
(Select from both I & II)

12-13

- | | |
|---|---|
| I. ECON 201
202,203
PCL 201 or 303
GEOG 350 or 360 | Economics Survey (3) or
Principles of Economics (4,4)
Political Science (4)
Social Geography (4) |
| II. PSY 201,202
SOC 201,202
SOC 310,311
COM 100 | Psychology (4,4)
Sociology (4,4)
Anthropology (4,4)
Basic Communications (4) |

Scientific Environment
(Select from at least two groups)

11-13

- I. **Biological Science (4-8)**
Any BIOL, MICRO or ZOOL course.
- II. **Earth Sciences (4-8)**
CEES 322
GEOL 100, 105, 201
GEOG 100, 301 Physical Geography
- III. **Physical Sciences (4-8)**
Any PHYS courses
Any CHEM courses
ENGR 100, 151, 152

*After the completion of a year of a foreign language, a student may substitute language for any 4 hours of credit in Cultural and Historical Foundations and 4 hours of credit in Social Sciences. The remaining hours may be used in the General Elective area of the student's major. For placement in language classes, see page 178.

ADVANCED PROGRAM (15)

Business (3)

BADM 301, 302, 371
MGMT 301

Engineering (3)

ENGR 380
ENGR 48Q to 489

Education (3)

EDEL 482
EDLS 380
EDTA 480
EDTA 481
ESPE 483
EDVE 381

Electives (Upper Division) (6)

These courses must be selected from a college other than the one in which the student is registered. A General Studies student may select electives from any college.



MAJOR IN GENERAL STUDIES

PURPOSE

The General Studies curriculum is a university-wide general purpose program leading to the Bachelor of Arts in General Studies or Bachelor of Science in General Studies degree. The determination of whether the Arts or Science degree shall be awarded will be determined by the course areas selected.

The program is administered through the office of the Associate Vice President for Academic Affairs and is designed for liberal education and academic flexibility. It recognizes that, apart from the professional curricula, there are many combinations of courses which can be structured into meaningful programs to meet the needs of individual students.

The General Studies program has two main purposes:

1. It accommodates students who desire a liberal, non-professional education encompassing several fields.
2. It provides a means for students to start a productive university education while delaying decision on professional curricula until the sophomore year.

Students who are undecided as to their major should pursue the General Studies program until they can select a specific major area.

Students fulfilling the requirements for a degree in General Studies must complete either the FTU Basic Environmental Studies Program or the General Education requirement at a Florida State Junior College. In addition, 15 quarter hours of Advanced Environmental courses are required as outlined on the previous page.

The General Studies student must complete a minimum of four course area groupings in which at least three colleges are represented. A minimum of 22 quarter hours must be completed in each area with an additional 22 quarter hours to be completed in a fifth area or used to strengthen one or more of the four course area groupings. However, students choosing only four course area groupings may include a maximum of 12 quarter hours of general electives in completing their degree program.

The areas of Business Administration, Education, and Engineering may be used twice provided a specific concentration corresponding to a traditional major is chosen for one of the area course groupings. For example, two areas in Business Administration may be completed using 22 quarter hours in Accountancy and 22 quarter hours in general business courses.

In addition to the university-wide degree requirements shown on page 57, a minimum grade point average of 2.0 must be achieved in each course grouping.

COURSE AREA GROUPINGS

AIR FORCE ROTC

S.S.**

For students who take and complete the Air Force R.O.T.C. four year or two year upper division programs.

ALLIED HEALTH SCIENCES

N.S.**

Allied Health Sciences, Medical Record Administration, Medical Technology, Nursing, Respiratory Therapy and other Health Related Professions.

BEHAVIORIAL SCIENCES	S.S.**
Anthropology, Psychology, Sociology, and Social Welfare.	
BIOLOGICAL SCIENCES	N.S.**
Biology, Botany, Microbiology, and Zoology.	
BUSINESS ADMINISTRATION	B.A.**
Accounting, Business Administration, Economics, [‡] Finance, Management, Marketing, and Quantitative Business Analysis.	
COMMUNICATIONS	S.S.**
Journalism, Radio-Television, Speech and general courses in Communications.	
EDUCATION*	E.D.**
Business Education, Library Science, Physical Education, Teaching Analysis, Vocational Education and selected courses from Elementary and Secondary Education.	
ENGINEERING	ENGR.**
Selected courses from any departmental offerings in the college, related courses from the engineering core and interdisciplinary groupings. (ENGR 480-489).	
FINE ARTS	HUM.**
Art, Music, and Theatre.	
HUMANITIES	HUM.**
English, Foreign Literature, History, Humanities, Philosophy, and Religion.	
LANGUAGES	HUM.**
French, German, Italian, Russian, Spanish.	
MATHEMATICAL SCIENCES	N.S.**
Computer Science, Mathematics, and Statistics.	
PHYSICAL SCIENCES	N.S.**
Astronomy, Chemistry, Forensic Science, Geography (Physical), Geology, Physics, and general courses in the Earth and Space Sciences.	
SOCIAL SCIENCES	S.S.**
Allied Legal Services, Criminal Justice, Economics, [‡] Geography (Social), Political Science, and Public Administration.	

[‡] This course shown in two areas.

*Consult your advisor. Many ED courses require concurrent public school practicum.

**The current six colleges are: Business Administration (B.A.); Education (ED.); Engineering (ENGR.); Humanities and Fine Arts (HUM.); Natural Sciences (N.S.); and Social Sciences (S.S.).

COLLEGE OF BUSINESS ADMINISTRATION

ACCOUNTANCY

BUSINESS ADMINISTRATION

ECONOMICS

FINANCE

MANAGEMENT

MARKETING

PRE-LAW

QUANTITATIVE BUSINESS ANALYSIS

MASTER OF BUSINESS ADMINISTRATION

MASTER OF SCIENCE

Accountancy

Management

MASTER OF ARTS IN ECONOMICS



COLLEGE OF BUSINESS ADMINISTRATION

DEAN: C.E. Gilliland, Jr.

ASSISTANT DEAN: F.J. Hitt

The purpose of education may be described as the maximum development of one's potential for accomplishment as an individual and as a responsible member of a dynamic society. The goal of the College of Business Administration is an extension of this purpose into the field of business.

The degree Bachelor of Science in Business Administration with several majors is offered by the College of Business Administration.

Graduates of the College of Business Administration may pursue a wide variety of careers in business and industry, in education, and in government. The various programs of study offered by the College are designed to assist the student in obtaining a sound academic preparation for the career of his choice.

COURSE REQUIREMENTS FOR GRADUATION

AREAS	Q.H.
1. Environmental Studies Program	69
Basic (54)	
Advanced (15)	
2. Business Core	48-49
3. Major Field of Concentration	27-33
Accountancy (33)	
Business Administration (27)	
Economics (29)	
Finance (27-28)	
Management (28)	
Marketing (28-29)	
Quantitative Business Analysis (31)	
4. Electives (varies with major)	29-36
 TOTAL QTR. HOURS REQUIRED	 180

In addition to the 180 total hours required for graduation, one must satisfy the following break-down of the 180 hours to include:

90 hours at a senior institution

72 hours of 300-400 level courses

72 hours of course work offered by the College of Business Administration

72 hours of course work taken outside the College of Business Administration

ENVIRONMENTAL STUDIES PROGRAM (69)

The student in the College of Business Administration is required to fulfill the general regulations for all undergraduate degree students listed on page 57 to satisfy the Environmental Studies Program. The College of Business Administration requires the following courses which may be included in the Environmental Studies Program:

COMP 303	Computer Fundamentals for Business Applications	3
ENGR 380	Production Management Concepts	3
ENG 301	Professional Report Writing	3
MATH 106	College Algebra	4
or		
MATH 320	Concepts of Calculus	
STAT 301	Fundamentals of Probability and Statistics	4

BUSINESS CORE (48-49)

The business core is designed to introduce the student to the foundation courses in each of the major areas of business administration. The business core provides a platform from which the student builds his major course of study.

LOWER DIVISION

ACCY 211, 212	Financial Accounting	3, 3/5
or 300		
BADM 271	Legal Environment of American Enterprise	3
ECON 202	Principles of Microeconomics	4
ECON 203	Introduction to Aggregate Economics	4

UPPER DIVISION

ACCY 310	Systems Concepts and Management Accounting	5
ECON 321	Quantitative Methods and Business Decision Analysis	4
FIN 301	Finance	5
MGMT 301	Management and Organization Behavior	3
MGMT 311	Human Behavior and Interpersonal Relations	3
MKTG 301	Marketing	5
ECON 401 ¹ 2	Managerial Economics	3
BADM 485	Business Policies	4

GRADE POINT AVERAGE REQUIREMENTS

For graduation the student must have maintained a minimum 2.0 GPA in course work taken in the College of Business Administration and a minimum 2.0 GPA in the course work in the major.

STUDENT LOAD - MAXIMUM

A student who is enrolled in 15 quarter hours of course work is considered to be carrying a normal academic load. Students desiring to take 19 or more quarter hours of course work must obtain permission from the Dean of the College of Business Administration.

¹ECON majors will take ECON 301 in lieu of ECON 401

²Other majors may substitute ECON 301,311,341,421,431,441, or FIN 331

SUGGESTED PROGRAM FOR BUSINESS COLLEGE MAJORS (First Two Years)

FIRST YEAR	F	W	S
Communications: (ENG 101; SPE 101; ENG 103 or other approved ENG writing course)	4	3	3
History (any course)		4	
HUM 201			4
MATH 106 or 320	4		
Scientific Environment	4	4	4
Social Sciences			4
General Electives	3	4	
TOTAL	15	15	15

SECOND YEAR	F	W	S
ACCY 211,212	3	3	
BADM 271			3
ECON 202, 203	4	4	
Elective (PHIL, LIT, ART, HUM, MUS, REL, THA)			4
Social Sciences	4	4	
STAT 301			4
General Electives	4	4	4
TOTAL	15	15	15
TOTAL QTR. HOURS REQUIRED			90

COMMUNITY/JUNIOR COLLEGE TRANSFERS

Community/Junior College students who plan to transfer to the College of Business Administration at Florida Technological University are advised to:

1. Complete the entire university-parallel program at the Community/Junior College to include:
 - A. the general education requirements prescribed by the Community/Junior College
 - B. the one-year accounting and economics sequences (sophomore year). (One course of an accounting or economics sequence will not fulfill the college of Business Administration Core Requirement).
 - A course in College Algebra
 - A course in Statistics

A minimum of 18 quarter credit hours of foundation courses (B above) is expected for College of Business Administration admission. The remainder of the prerequisite work must be completed as soon as practicable after admission.
 - C. as many of the following prerequisite courses as possible:
 - A course in Business Communication (Technical Report Writing)
 - A course in Business Law
 - A course in Public Speaking
 - A course in General Psychology (required for Management and Marketing majors)

- D. the remainder of the 90-93 quarter credit hours in university-parallel courses by electing courses in the following areas: English, mathematics, natural sciences, social science, foreign language, and humanities.
2. Avoid the following professional courses: Principles of Management, Principles of Marketing, Principles of Finance, and similar courses. These professional courses are available only as third and fourth year courses in the college of Business Administration and consequently cannot be satisfied with Community/Junior College courses.

MAJOR COURSE REQUIREMENTS

ACCOUNTANCY

Faculty: *Avery, Bldg. GCB 430, Phone 275-2463
Busch, Bussman, Causey, Johnson, Krebs, Wood.*

Accountancy is usually selected as a major by the student who is preparing for industrial, governmental, or public accounting, or who wishes to use accountancy as general training for a career in business.

The size and nature of the organization determines the scope of the industrial accountant's activities but, broadly defined, the following duties are illustrative—design and installation of accounting systems, preparation of financial statements and reports, cost accounting, internal auditing, interpretation and analysis of budgets, and preparation of tax returns.

The principles which underlie governmental accounting are, in general, aimed at meeting certain legal requirements, based on the public nature of the activity. These activities include the operations of governments and subdivisions thereof, such as national and state governments, counties, cities, villages, and park and school districts.

In today's complex society, the Certified Public Accountant performs a specialized professional service which is indispensable to investors, bankers, businesses and governmental units of all sizes. As the needs of these fields have grown, the CPA's profession has broadened its dimensions to keep pace. The CPA's best known function is to audit — or, to conduct an objective examination and analysis of a company's financial statements for the purpose of expressing his independent opinion as to whether or not the statements fairly present the organization's financial position and results of operations.

Course requirements for a major in Accountancy are:

ACCY 311	Intermediate Accounting	5
ACCY 312	Intermediate Accounting	5
ACCY 320	Cost Accounting	5
ACCY 410	Advanced Accounting	5
ACCY 430	Auditing	5
ACCY 450	Federal Income Tax Accounting	5
ACCY 470	Current Selected Topics	3

Not more than 36 hours of credit in Accountancy beyond the College business core requirement may be counted in the 180 quarter hours for graduation.

SUGGESTED PROGRAM FOR ACCOUNTANCY

THIRD YEAR	F	W	S
ACCY 310		5	
ACCY 311	5		
ACCY 312		5	
ACCY 320			5
COMP 303		3	
ECON 321	4		
ENG 301			3
FIN 301			5
MGMT 301		3	
MGMT 311			3
MKTG 301	5		
TOTAL	14	16	16
FOURTH YEAR			
ACCY 410	5		
ACCY 430		5	
ACCY 450			5
ACCY 470			3
BADM 485			4
ECON 401 (or subs)		3	
ENGR 380	3		
Adv. Environmental Studies	3	3	
Electives	4	4	3
TOTAL	15	15	15
TOTAL QUARTER HOURS			180

BUSINESS ADMINISTRATION

Faculty: *Reidenbach, Bldg. CB412, Phone 275-2109*

Gilliland, Golden, Hitt, Manske, Schov, Stone, Winchester.

Business Administration is normally selected as a major by those students who do not wish to concentrate in a specialized or functional field within the major disciplines offered by the College of Business Administration. Instead the student is encouraged to take advantage of the opportunity to select from any of the areas which interest him, thereby making the program a highly flexible one which is also extremely broad in content.

The curriculum contains a large number of elective options which when coupled with the basic courses required of all students in the College, will give the student a breadth of understanding so as to enable him to take advantage of the multitude of opportunities found outside of a specialized field.

Course requirements for a major in Business Administration are:

Required:

ECON 431 Public Finance in the American Economy

4

FIN 321	Investments;	
OR 331	Money and Banking;	4
OR 411	Financial Institutions	
MGMT 401	Organization Theory	4
MGMT 402	Decision Systems Analysis	4
MKTG 384	Marketing Research	5

Electives:

At least two additional courses from a minimum of two areas in the College of Business Administration.

SUGGESTED PROGRAM FOR BUSINESS ADMINISTRATION

THIRD YEAR	F	W	S
ACCY 310	5		
COMP 303	3		
ECON 321		4	
ENG 301	3		
ENGR 380		3	
FIN 301			5
MGMT 301	3		
MGMT 311		3	
MKTG 301		5	
MKTG 384			5
Electives			6
TOTAL	14	15	16

FOURTH YEAR	F	W	S
BADM 485			4
ECON 401 (or ECON 301, 311, 341, 421, 431, 411, or FIN 331)		3/4	
ECON 431			4
FIN 321, 331, or 411	4		
MGMT 401	4		
MGMT 402		4	
Advanced Environmental Studies	4	3	
Electives (Business)		4	3/4
Electives	4		4
TOTAL	15	14/15	15/16
TOTAL QUARTER HRS. REQUIRED			180

ECONOMICS

Faculty: Hicks Bldg. CB 438, Phone 275-2466

David, Farah, Klages, Raffa, Slemmer, Thompson, White, Xander

The discipline of economics is defined in several ways. It is most frequently described as the study of how man uses limited resources to satisfy his wants. Within this framework, the economist is concerned with (1) the functioning of the economy as a whole and (2) the functioning of individual units within the economy, particularly the business firm and the consumer. Many important fields are covered in the study of economics, including economic theory, labor, international trade, economic history,

agriculture, quantitative analysis, public utilities, economic systems, economic development, public finance, business and government, and urban economics.

One of the major goals of economics is the preparation of a student for intelligent citizenship. The economics courses required of all students in the College of Business Administration are designed to provide a sound grasp of tools of analysis and measurement, as well as the ability to apply systematic analysis to problems of business policy. A major in economics prepares the student for a variety of careers in business, industry, and government.

Although all of the economics courses are administered and offered by the College of Business Administration, a student majoring in economics may earn either a Bachelor of Science in Business Administration degree in the College of Business Administration or a Bachelor of Arts degree in the College of Social Sciences. There are significant differences in these two degree programs. The Bachelor of Science in Business Administration degree student must complete the business core. The Bachelor of Arts degree requirements are listed in the College of Social Sciences section of this catalog.

Major course requirements for the Bachelor of Science in Business Administration degree with a major in Economics are:

Required:

ECON 301	Intermediate Price Theory	4
ECON 311	Intermediate Money, Income and Employment Theory	4
ECON 431	Public Finance in the American Economy	3
FIN 331	Money and Banking	4

Elective: (Five courses in economics not used elsewhere)

All economics majors will be required to take five electives beyond the major required economic courses of 301, 311, 431, and FIN 331.

Concentration:

Economics majors may have a concentration in any economics area offering sufficient courses including quantitative courses.

Not more than 32 quarter hours of credit in Economics beyond the College of Business Administration's business core requirements may be counted in the 180 quarter hours required for graduation.

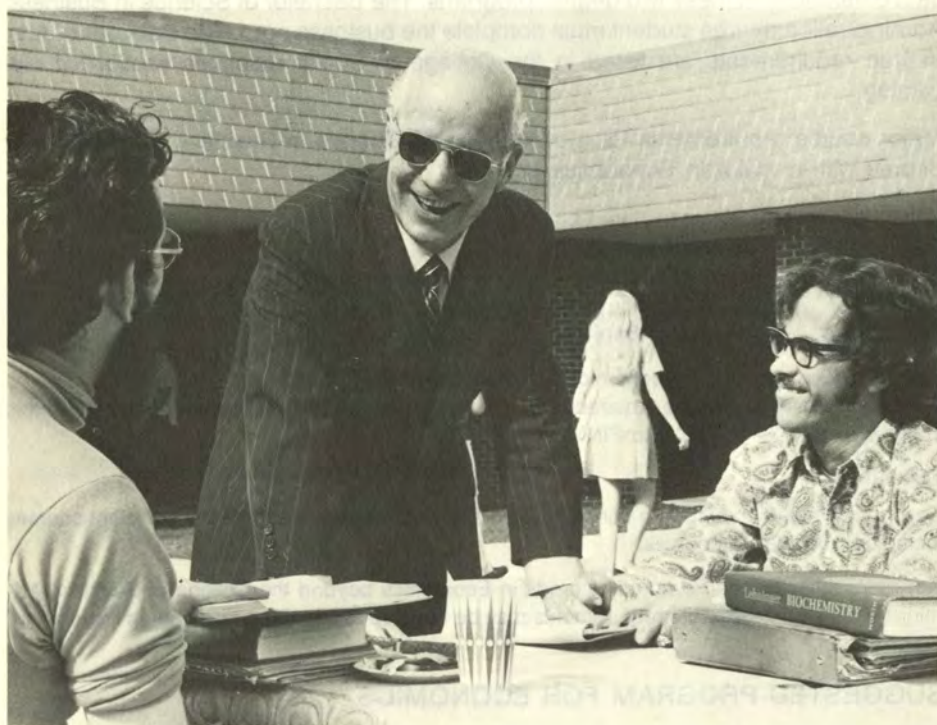
SUGGESTED PROGRAM FOR ECONOMICS

THIRD YEAR	F	W	S
ACCY 310	5		
COMP 303		3	
ECON 301	4		
ECON 311		4	
ECON 321		4	
ECON 431			3
ENG 301			3
FIN 301		5	
FIN 331			4
MGMT 301	3		
MKTG 301			5
STAT 301	4		
TOTAL	16	16	15

FOURTH YEAR	F	W	S
MGMT 311		3	
BADM 485			4
ENGR 380	3		
Electives (ECON-any five courses)¹	7	6	6
Electives	5	3	
Advanced Environmental Studies		3	3
	TOTAL	15	13
TOTAL QTR. HOURS REQUIRED			180

¹ECON 371-PR: ECON 203 and MATH 223.

ECON 451-PR: ECON 371 and ECON 421.



FINANCE

Faculty: Reiff, Bldg. CB 443, Phone 275-2415

Brewer, Budina, Chambers, Millican

The program in finance is designed to provide the student with a broad knowledge in the areas of business and corporation finance and investments. The program provides the student with the theoretical background and the tools of analysis required for making effective judgments in finance.

Business and corporation finance emphasizes the institutions and instruments through which short-term and long-term capital may be obtained and the management of funds in the individual firm.

The area of investments includes an analysis of the different types of outlets for investment funds, such as stocks and bonds, and an examination of the various factors for investment funds, such as stocks and bonds, and an examination of the various factors involved in investment decisions and portfolio management.

The study of finance prepares the student for careers in business financial management and with financial institutions. Commercial banks, savings and loan associations, insurance companies, and investment firms represent some of the financial institutions seeking the student who majors in finance.

Course requirements for a major in Finance are:

Required:

FIN 321	Investments	4
FIN 351	Financial Institutions	4
FIN 361	Financial Models	4

Electives: (Select 4 Courses)

FIN 311	Risk and Insurance	4
FIN 331	Money and Banking	4
FIN 341	Real Estate	4
FIN 352	Commercial Bank Adm.	4
FIN 421	Security Analysis	4
FIN 431	Financial Management	4
FIN 461	Portfolio Management	4

Not more than 32 quarter hours of credit in Finance beyond the college business core requirement may be counted in the 180 quarter hours required for graduation.

SUGGESTED PROGRAM FOR FINANCE

THIRD YEAR	F	W	S
ACCY 310	5		
COMP 303		3	
ECON 321	4		
ENG 301	3		
FIN 301		5	
FIN 321			4
FIN 351		4	
FIN 361			4
MGMT 301	3		
MGMT 311		3	
MKTG 301			5
Electives			3
TOTAL	15	15	16

FOURTH YEAR	F	W	S
BADM 485			4
ECON 401 (or ECON 301,311,341,421, 431, 441)		3/4	
ENGR 380	3		
Electives (FIN 311, 331, 341, 352, 421, 431 or 461)	8	4	4
Electives	4	4	4
Advanced Environmental Studies		3	3
	TOTAL	15 14/15	15
TOTAL QTR. HOURS REQUIRED			180

MAJOR FOR PRE-LAW STUDENTS

Schools of Law admit graduates of accredited colleges, but most do not prescribe a standard program for the major in the undergraduate college. They generally suggest that applicants present a major in one of the following subject areas supported by electives from these same fields: accounting, economics, English, finance, history, literature, political science, sociology, and speech. Students who expect to enter a school of law should plan their program with the aid of the pre-law advisor.

MANAGEMENT

Faculty: Callarman Bldg. CB409, Phone 275-2378

Berry, Bogumil, Cornish, Jones, Martin, Roush, Wilkinson, Wilson

The study of management includes an investigation into the areas of organization theory, personnel management, and production management. An understanding of organizations and the process by which they develop and influence behavior is important to the study of management.

Organization theory focuses on the organization as a social system and the forces which affect this system, and includes behavior of individuals in groups, economic conditions and technology. Personnel management and industrial relations are concerned primarily with the effective utilization of human resources within the business organization.

The production manager specializes in the efficient utilization of the organization's material resources. The design and improvement of productive capacity and the coordination of the production process with other system activities are primary concerns.

A student majoring in management may find a wide variety of career opportunities in business, industry, or government.

REQUIRED:

MGMT 364	Personnel Management	4
MGMT 401	Organization Theory	4
MGMT 402	Decision Systems Analysis	4
MGMT 424	Production Management Problems	4
MGMT 465	Industrial Relations	4
MGMT 466	Human Relations in Management	4
COM 311	Business and Professional Communication	4

SUGGESTED ELECTIVES

COMP 487	Computer Processing of Business Data	3
ECON 331	Economics of Labor	3
FIN 431	Financial Management	4
MGMT 464	Personnel Problems	4
MKTG 367	Sales Management	4

Not more than 32 quarter hours of credit in Management beyond the college business core requirement may be counted in the 180 quarter hours required for graduation.

SUGGESTED PROGRAM IN MANAGEMENT

THIRD YEAR	F	W	S
ACCY 310	5		
COM 311			4
COMP 303		3	
ECON 321		4	
ENG 301	3		
ENGR 380	3		
FIN 301		5	
MGMT 301	4		
MGMT 311		3	
MGMT 364			4
MKTG 301			5
Electives			3
TOTAL	14	15	16

FOURTH YEAR	F	W	S
BADM 485			4
ECON 401 (or ECON 301, 311, 341, 421, 431, 441, or FIN 331)		3/4	
MGMT 401	4		
MGMT 402		4	
MGMT 424	4		
MGMT 465		4	
MGMT 466			4
Advanced Environmental Studies	3		3
Suggested Electives	4	4	3/4
TOTAL	15	15/16	14/15
TOTAL QTR. HOURS REQUIRED			180

MARKETING

Faculty: Teeple, Bldg. CB416, Phone 275-2115
Fuller, McAleer, Rubin

Marketing encompasses the total system of interacting business activities designed to plan, price, promote, and distribute want-satisfying products and services to present and potential customers.

The marketing curriculum concentrates on developing the student's ability to understand, interpret, and measure market demand and to understand the blending of product differentiation, pricing strategies, promotional strategies, and physical distribution so as to optimize the efficiency of the total system and the profits of the individual firm.

Students majoring in marketing find career opportunities in the areas of advertising, sales promotion, sales management, industrial sales, purchasing, marketing research, product planning, physical distribution, and other related management positions. This type of career opportunity may be found in the manufacturing, transportation, communication, public utility, wholesale trade, retail trade, finance, insurance, real estate, construction, mining, agriculture, service or other industries. Opportunities are also available in education and government.

Course requirements for a major in Marketing are:

REQUIRED:

MKTG 326	Consumer Market Behavior	4
MKTG 367	Sales Management	4
MKTG 384	Marketing Research	5
MKTG 485	Marketing Policies and Strategies	4

Electives:

Minimum of 3 courses with a maximum of one in PSY, COM area

BADM 444	International Business Operations	4
MKTG 334	Marketing Models and Logistics	4
MKTG 364	Advertising Management	4
MKTG 469	Channels of Distribution Management	4
MKTG 489	Current Marketing Problems	4
PSY 300, 308, or COM 311		4

Not more than 32 quarter hours of credit in Marketing beyond the college business core requirements may be counted in the 180 quarter hours required for graduation.

SUGGESTED PROGRAM FOR MARKETING

THIRD YEAR	F	W	S
ACCY 310	5		
COM 311 or PSY 300, 308			4
COMP 303			3
ECON 321		4	
ENG 301	3		
FIN 301		5	
MGMT 301	3		
MGMT 311		3	
MKGT 301	5		
MKTG 326		4	
MKTG 367			4
Electives			3
TOTAL	16	16	14

FOURTH YEAR	F	W	S
BADM 485			4
ECON 401 (or ECON 301,311,341,421,431, 441, or FIN 331)		3/4	
ENGR 380	3		
MKTG 384	5		
MKTG 485		4	
Advanced Environmental Studies	3	3	
Electives (Marketing)		4	4
Electives	4		6/7
TOTAL	15	14/15	14/15
TOTAL QUARTER HRS. REQUIRED			180

QUANTITATIVE BUSINESS ANALYSIS

Faculty: *Newman*, Bldg. CB 414, Phone 275-2840
Gallagher

The increased use of sophisticated tools of quantitative analysis in the business world requires additional emphasis in the quantitative area. The quantitative business analysis option provides an opportunity for the quantitatively able student to utilize his ability in the solution of business and economic problems through the use of mathematical tools. A good foundation in mathematics and statistics is required of students selecting this major.

There is a wide range of opportunities in business and industry, government, research, and education awaiting the student completing his major in quantitative business analysis.

The Quantitative Business Analysis student is required to carry MATH 320 in lieu of MATH 106.

Course requirements for a major in Quantitative Business Analysis are:

REQUIRED:

COMP 304	Computer Fundamentals for Business Applications II	3
QBA 312	Quantitative Analysis I	4
QBA 313	Quantitative Analysis II	4
QBA 450	Business Simulation	4
QBA 451	Quantitative Applications to Business Problems	4

Electives: Minimum of 12 credit hours, of which 8 credit hours must be in the College of Business Administration

ACCY 320	Cost Accounting	5
COMP 310	Business Data Processing Software Survey	3
COMP 311	Analysis of Computer Systems and Hardware	3
COMP 340	Data Structures and Operating Systems for Business	3
COMP 487	Computer Processing of Business Data	3
ECON 421	Economic Statistical Analysis	4
FIN 431	Financial Management	4
MGMT 402	Decision Systems Analysis	4
MGMT 403	Managing Decision Systems	4

Not more than 32 quarter hours of credit in Quantitative Business Analysis beyond the college business core requirements may be counted in the 180 quarter hours required for graduation.

SUGGESTED PROGRAM FOR QUANTITATIVE BUSINESS ANALYSIS

THIRD YEAR	F	W	S
ACCY 310	5		
COMP 303, 304	3	3	
ECON 321	4		
ENG 301	3		
ENGR 380			3
MGMT 301		3	
MGMT 311			3
MKTG 301		5	
QBA 312			4
Electives (Quantitative Business Analysis)		3/5	
TOTAL	15	14/16	15
FOURTH YEAR			
BADM 485			4
ECON 401 (or ECON 301, 311, 341, 421, 431, 441)	3/4		
QBA 313	4		
QBA 450, 451		4	4
Electives (Quantitative Business Analysis)	3/5	3/5	3/5
Advanced Environmental Studies		3	3
Electives	4	4	
TOTAL	14/17	14/16	14/16
TOTAL QTR. HOURS REQUIRED			180

GRADUATE PROGRAMS

The College of Business Administration offers curricula leading to the Master of Business Administration degree, the Master of Science in management degree and the Master of Science in accountancy degree. The graduate programs are conducted under the direction of a faculty committee on graduate study.

Students may start the program during any quarter. Graduate courses are available in the afternoon and evening. The day program is designed primarily for full-time students and the evening program is scheduled for part-time students.

ADMISSION REQUIREMENTS

Admission is open to the student with a baccalaureate degree from an accredited college or university, with a minimum of 3.0 grade point average (based on a 4.0 system) while registered as an upper division undergraduate student, and an acceptable score on the Admission Test for Graduate Study in Business (ATGSB — 450 with a minimum of 23 on the verbal portion). Students who are deficient in one of these requirements may petition for special consideration. Such consideration will be based on the applicant's intellectual development during the course of his previous academic career, his extracurricular activities, employment experience, and other evidences of motivation for graduate study. No previous academic training in business is required, thus the three Master degree programs are open to graduates in education, engineering, liberal arts, science, and other fields as well as business.

The applicant will not be considered for regular graduate status until his score on the Admission Test for Graduate Study in Business, a transcript showing proof of attainment of the Bachelor's degree and the transcripts of all other colleges attended have been submitted to the Director of Admissions of the University. The applicant must arrange for transcripts to be submitted by the proper officials of the institutions which he attended. Transcripts in the possession of an applicant cannot be accepted. It is the applicant's responsibility to make arrangements to take the Admission Test for Graduate Study in Business (ATGSB) and to direct the Educational Testing Service to mail the test score to the Director of Admissions, Florida Technological University. The ATGSB test is administered at locations throughout the United States and in foreign test centers in February, April, June, August, and November. Applications and information for the test may be obtained from the Educational Testing Service, Box 966, Princeton, New Jersey 08540. Completed applications for the test must be returned to the Educational Testing Service at least three weeks in advance of each scheduled test date.

FOREIGN STUDENTS

Applicants from foreign countries whose native language is not English are required to submit scores on the Test of English as a Foreign Language (TOEFL) examination in addition to the ATGSB. The TOEFL and ATGSB are offered periodically at test centers throughout the world by the Educational Testing Service. The TOEFL Bulletin of Information for Candidates, International Edition and Registration Form are available at American embassies, consulates, offices of the United States Information Service or other U.S. government agencies abroad.

PERSONAL INTERVIEW AND ENROLLMENT

A personal interview with the Coordinator of the graduate program, in connection with the application for admission is desirable. Personal interviews may be arranged through the Office of the Dean.

Enrollment in graduate courses is limited to students who have been accepted in one of the admission categories for the MBA, MSm and MSa programs. Students who apply too late to take the Admission Test for Graduate Study in Business may be required to register for prerequisite undergraduate courses only. An exception may be made for a student ranking in the upper 10% of his undergraduate class. The College of Business Administration office must have the student's application for admission on file prior to the registration for the prerequisite courses.

RESIDENCE REQUIREMENTS

For the purpose of assessing tuition, a Florida student is considered to be an applicant who has been a resident in the State of Florida for at least 12 months immediately preceding his registration.

FULL-TIME/PART-TIME ENROLLMENT

The MBA, MSm and MSa degrees may be earned by employed students through enrollment in evening classes. Those students who take no more than eight quarter hours of credit per quarter, whether prerequisite (undergraduate or foundation) or

graduate courses, are considered part-time. Students who need most of the pre-requisite courses will normally require the equivalent of two academic years of full-time study in order to complete the requirements for the MBA, MSm or MSa degree. The time required to complete the requirements for the degree will be determined on an individual basis.

TRANSFER GRADUATE CREDIT

A maximum of nine quarter hours (18 quarter hours from Universities within the State University System of Florida) of graduate credits beyond the preparatory requirements may be transferred from another accredited institution, if taken within the last five years. The student should request the transfer of credits promptly after being admitted to the graduate program and prior to registration as this information will be considered in his course planning.

SCHOLASTIC REQUIREMENTS

An overall "B" average is required in all graduate work. Individuals earning in excess of nine hours of "C" will immediately have their status changed to Post-Baccalaureate and thus be excluded from graduate studies. When a student's cumulative GPA for 12 or more hours of graduate credit falls below 3.0 his status will automatically be changed to Provisional as this constitutes unsatisfactory performance.

The student's program must be completed within five years of enrollment in the first graduate class beyond the foundation program.

MASTER OF BUSINESS ADMINISTRATION

The program of study for the Master of Business Administration degree is primarily concerned with the advanced study of broad business concepts and relationships. The purposes are (a) to develop depth of knowledge of the business functions, (b) to strengthen the analytical tools of the individual for use in research necessary to resolve business problems, (c) to expose the student to decision-making concepts and practices, and (d) to encourage a logical approach to the resolution of business problems.

PROGRAM OF STUDY

Prerequisites for Graduate Program. The following prerequisites should be completed before a student may enroll in required/elective graduate courses:

Prerequisite Undergraduate Courses/Equivalent Foundation Courses

ACCY 211, 212 or ACCY 300 or ACCY 501	Basic Concepts Financial Accounting Financial Accounting Concepts
BADM 371 or BADM 501	Business Law Business Environment and Business Law

ECON 202	Principles of Microeconomics
ECON 203	Introduction to Aggregate Economics
or	
ECON 501	Economic Concepts
STAT 301	Fundamentals of Probability and Statistics, or Calculus
ECON 321	Business and Economic Statistics
or	
ECON 521	Statistics for Business and Economics
FIN 301	Finance
or	
FIN 501	Financial Concepts
MGMT 301	Management
and	
ENGR 380	Production Management Concepts
or	
MGMT 501	Management and Production Concepts
MKTG 301	Marketing
or	
MKTG 501	Marketing Concepts

Students completing their last prerequisite course(s) may register for graduate courses in the same quarter with the permission of the Coordinator of the graduate program.

Prerequisite courses must have been completed with a minimum grade of "B" within the past five years at an accredited college or university. Prerequisites may be satisfied through completion of the equivalent foundation course or through credit by examination.

Course Requirements: In addition to the prerequisites listed above, a minimum of 45 quarter hours of graduate study is required for the Master of Business Administration degree. The required graduate courses for the MBA program are as follows:

Required:

ACCY 601	Accounting Analysis	3
BADM 601	Operations Research Models for Business	3
BADM 611	Systems Analysis for Business Problem Solving	3
BADM 621	Business Policy	3
BADM 695	Research Methods	3
ECON 601	Economic Analysis of the Firm	3
ECON 621	Statistical Models for Business	3
FIN 601	Capital Management and Analysis	3
FIN 611	Financial Management of Current Operations	3
MGMT 601	Planning and Control Analysis	3
MGMT 611	Analysis of Organizational Behavior	3
MKTG 601	Marketing Analysis	3
TOTAL		36



Elective Credit: Each student in the MBA program will complete at least nine hours of approved electives from 600 level courses. Students may make selections from any 600 level offerings in the College of Business Administration, or, by petition, certain graduate courses which may be open to them in other colleges and are approved by the Graduate Study Committee of the College of Business Administration. A graduate elective course in the student's major for the student with a baccalaureate degree in Business Administration completed within the previous five years.

Research Project: No thesis is required for the MBA degree. A student may petition to accomplish an independent study for three hours of elective graduate credit (BADM 694) or a major research project and written report for six hours of elective graduate credit (BADM 697-698). The research project will include the statement, exposition and resolution of a hypothesis in an area of Business Administration by means of a critical and analytical review of existing literature or through primary research.

Comprehensive Examination: Satisfactory completion of a written comprehensive examination is required for the MBA degree. The two hour comprehensive examination on the major areas of study normally will be taken during the eighth week of the final quarter of required course work.

MASTER OF SCIENCE IN ACCOUNTANCY

The Master of Science in accountancy stresses the development of advanced accounting skills to provide resources for decision making and problem solving in public, private and government accounting. Course work is practice oriented, emphasizing quantitative techniques and computer skills. Courses offered within the MSa core program have received approval from the State Board of Accountancy and satisfy all requirements of Rule 21A-8.03 (5th year in accountancy) and Rule 21A-13.03 (professional education).

PROGRAM OF STUDY

Prerequisites for Graduate Program. The following prerequisite accounting courses should be completed in addition to the prerequisites listed for the MBA program.

Prerequisite Undergraduate Accounting Courses

ACCY 211, 212 Financial Accounting I, II
or

ACCY 300	Financial Accounting
ACCY 310	Basic Systems Concepts and Management Accounting
ACCY 311, 312	Intermediate Accounting
ACCY 320	Cost Accounting
ACCY 410	Advanced Accounting
ACCY 430	Auditing
ACCY 450	Federal Income Tax Accounting

Foundation courses must have been taken at an accredited institution with the student earning a grade of C or higher.

Course Requirements: The Master of Science in accountancy is awarded upon satisfactory completion of a graduate program of 45 quarter hours; 39 hours in the core and 6 hours of graduate elective courses. The required graduate courses for the MSa program are as follows:

ACCY 610	Contemporary Accounting Theory	5
ACCY 612	Computers and Information Systems in Accounting	5
ACCY 620	Advanced Auditing	5
ACCY 630	Cost Accounting for Management Decisions	5
ACCY 640	Taxation	5
ACCY 650	Specialized Accounting Problems	5
ACCY 695	Research Methods	3
or		
BADM 695		
ECON 601	Economic Analysis of the Firm	3
ECON 621	Statistical Models for Business	3

The MSa does not require a thesis. However, students wishing to do research may choose among the following options: (1) independent study; (2) a major research project and written report for 6 hours credit (BADM 697-698); or (3) a thesis for a maximum of six elective graduate credits.

MASTER OF SCIENCE IN MANAGEMENT

The purposes of the Master of Science in management degree are to provide students with a broad understanding of business administration and the experience and knowledge gained from the in-depth research in one area of management provided by the thesis requirement. The Master of Science in management is of particular interest to those students who wish to pursue the doctorate in business.

PROGRAM OF STUDY

Prerequisites for Graduate Program: Same as for the MBA program.

Course Requirements: In addition to the prerequisites, a minimum of 45 quarter hours of graduate study is required for the Master of Science in management degree. Required graduate courses for the MSM program are identical to the 36 hours of re-

quired course work for the MBA program.

Thesis: Specialization for the Master of Science in management will be achieved through the research required in an area of management to prepare a satisfactory thesis.

Nine hours of credit (MGMT 699) are granted for the thesis. Each student will be expected to defend his thesis.

MASTER OF ARTS IN ECONOMICS

The program of study for the Master in Economics degree is designed to provide the necessary specialization in economics for those desiring careers in the academic, governmental, business, and financial communities.

PROGRAM OF STUDY

Prerequisites for Graduate Program. The following prerequisites should be completed before enrolling in graduate courses. However, a graduate course may be taken if there are no undergraduate prerequisites.

ECON 301	Intermediate Microeconomics
ECON 311	Intermediate Macroeconomics
ECON 431	Public Finance
FIN 331	Money and Banking

It is desirable for the student to have completed the above undergraduate courses prior to beginning graduate work as they are prerequisites to some of the graduate courses. However, students may register for prerequisites and graduate courses which require no prerequisites in the same quarter.

Prerequisite courses must have been completed within the past five years at an accredited college or university.

Course Requirements: In addition to the prerequisites listed above, a minimum of 45 quarter hours of graduate study is required for the Master of Economics degree. The required graduate courses for the MA program are as follows:

REQUIRED:

ECON 602	Price Theory	5
ECON 612	Macroeconomic Theory	5
ECON 622	Statistical Analysis of Economic Data	5
ECON 698	Research Methodology	3
TOTAL		18

A thesis is required of all MA students and may not exceed nine hours of graduate credit. The remaining credits, at least 18, may be taken from elective courses offered by the Department of Economics. Nine hours of graduate credit may be accepted from other recognized programs upon the approval of the departmental graduate committee.

General Information

Additional information pertaining to graduate programs is available in the graduate section of this bulletin (See pages 72-74).

COLLEGE OF EDUCATION

ELEMENTARY

SECONDARY

BIOLOGY

BUSINESS EDUCATION

CHEMISTRY

ENGLISH LANGUAGE ARTS

FOREIGN LANGUAGE

MATHEMATICS

PHYSICS

SOCIAL SCIENCES

SPEECH

COMPREHENSIVE (K-12)

LIBRARY MEDIA

MUSIC EDUCATION

PHYSICAL EDUCATION

VISUAL ARTS

ADVANCED STUDIES



COLLEGE OF EDUCATION

Dean: *C.C. Miller*
Associate Dean: *R.G. Cowgill*
Assistant Dean: *N.J. McLain*

The College of Education is organized as a professional college within the University. Each student who is planning a career in teaching in the elementary or secondary schools should enroll in this College.

The academic program is primarily concerned with three broad areas: Environmental Studies, Specialized Preparation and Professional Preparation. All of these areas are interrelated and interdependent.

The Environmental Studies requirements are designed to provide a broad foundation for each individual. These courses are offered by each of the colleges.

In general, specialized preparation in subject matter areas for secondary education majors is offered by the University's other colleges, while specialized elementary education content courses are offered by the College of Education. All programs are developed in cooperation with the other colleges within the University.

The professional sequence is the responsibility of the College of Education and is designed to:

- A. Give insights into the processes of school curriculum and organization.
- B. Present an opportunity for the student to understand how learning takes place, as well as furnish him with methods and procedures needed for successful teaching.
- C. Develop an understanding of the society in which the school functions.
- D. Build an awareness in the individual of his relationship with students and the community.
- E. Provide significant prestudent teaching experiences and a culminating student-teaching experience near the end of his program.
- F. Stimulate each individual toward the realization of the challenges and responsibilities in the field of education and begin the development of a basic philosophy of education.

Considerable emphasis is given to providing all education majors with an opportunity to have cooperatively planned learning experiences in a laboratory setting. The laboratory experiences are specifically designed to blend realistic practical experience with theoretical knowledge. In most instances elementary and secondary schools in Central Florida serve as educational laboratories for the students of the College of Education.

The College of Education plans cooperatively with Student Affairs in the development of an effective intramural program. It also provides the physical education courses that may be applied in the Environmental Studies program.

Program design will continue to change as evaluation and research determine the advisability of change in reference to the student's personal and academic needs.

Programs are offered leading to the Bachelor of Arts degree and the Master of Education degree in Education.

BACHELOR OF ARTS DEGREE PROGRAM

The Career Teacher Programs are designed to lead to the Bachelor of Arts degree. Students are encouraged to enroll in the College of Education as early as the freshman year. Junior transfer students will enter Phase I of the professional education sequence during the first quarter in which they enroll.

A minimum of 180 quarter hours is required for graduation. Requirements, however, vary according to the selected teaching major as follows:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)*	
Advanced (15)	
Academic Specialization	41-76
Professional Preparation	38-44
Phase I. Teaching Analysis and Human Development	
Phase II. Developmental-Elementary	
Developmental-Secondary	
Phase III. Teaching Strategies	
Student Teaching	
Electives (<i>varies with major</i>)	7-33

CERTIFICATION FOR TEACHING

UNDERGRADUATE CERTIFICATION

All College of Education curricula are designed to fulfill the State of Florida certification requirements. Upon application to the State Department of Education a graduate may be issued a Rank III Florida Teaching Certificate. In addition, there is an "Interstate" agreement with several states for those College of Education graduates who desire to teach outside of Florida. Check with the Dean, College of Education or Florida Department of Education for information.

*Students must complete a minimum of nine (9) quarter hours of English composition, rhetoric or grammar.

UNDERGRADUATE CAREER TEACHER PROGRAM

The Career Teacher Program consists of three distinct Phases:

PHASE I—TEACHING ANALYSIS

This phase is required of all education majors and designed to acquaint the student with basic teaching procedures, pre-instructional planning, phases of performance evaluation, and the developmental-behavioral characteristics of children. Various aspects of the teaching profession are analyzed. Experiences will provide the student a basis for deciding whether or not to pursue teaching as a career. Any university student in good standing who qualifies for sophomore courses may enroll in Phase I.

PHASE II—DEVELOPMENTAL

Developmental activities are structured to provide the prospective teacher opportunities to develop specific teaching skills and to expand his teaching field knowledge. Included are analysis of evaluation practices, school curricula, learning theory, special instructional techniques, and variables which affect classroom environment. Laboratory experiences in Phase II are jointly planned by public school personnel and university faculty. These student-teaching experiences will occur in Teacher Education Centers which are selected public elementary or secondary schools. To be admitted to Phase II a student must have an overall 2.0 academic average, have successfully completed Phase I requirements, and must demonstrate competency in written and oral communication skills.

PHASE III—APPLICATION

In Phase III the student applies the fundamentals of teaching and academic knowledge attained in Phases I and II. Under the supervision of a selected teacher, the student is responsible for developing and executing plans. A full quarter is devoted to student teaching. Concurrent enrollment in the seminar, Teaching Strategies, is required. To be admitted to Phase III, a student must have satisfied the requirements for Phase I and Phase II; have a 2.2 average in his area of academic specialization; a 2.0 overall average; be recommended by the Phase II Teaching Team; and be accepted by the office of the Professional Laboratory Program. An application for Phase III, Student Teaching must be submitted no later than October 1 for the Winter Quarter; January 15 for the Spring Quarter; and April 5 for the Fall Quarter.

ELEMENTARY EDUCATION

Chairman: *Martin*, Bldg. GC 317, Phone 275-2161

Faculty: *Anderson, Bird, Bunnell, Cox, Esler, F. Green, Haughee, Hynes, Merritt, Midgett, J. Olson, Palmer, Poe, Thompson.*

The Elementary Education Program is planned for students interested in the development and education of children six to twelve years of age. Students majoring in elementary education are certified to teach grades one through six upon graduation and receipt of a state teacher's certificate. Areas of study required are: (1) Environmental Studies (69 quarter hours); (2) Academic Specialization (41 quarter hours); (3) Professional Preparation (38 quarter hours); (4) Related Field of Academic Concentration (12 q.h. minimum); and (5) Electives (21 quarter hours).

ACADEMIC SPECIALIZATION COURSES

Q.H.

EDEL 301	Teaching Mathematics in the Elementary School	3
EDEL 302	Mathematics Programs in the Elementary School	3
EDEL 306	Music in Elementary School	3
EDEL 307	Literature for Children	3
EDEL 312	Reading in the Elementary School	3
EDEL 315	Teaching Science in the Elementary School	3
EDEL 317	Teaching Social Sciences in the Elementary School	3

EDEL 405	Language Arts in the Elementary School	5
EDEL 406	Art in the Elementary School	3
EDEL 407	Classroom Diagnosis and Treatment of Reading Difficulties	3
EDEL 408	Science Programs in the Elementary School	3
EDEL 409	Social Science Programs in the Elementary School	3
EDEL 415	Teaching Elementary School Health and Physical Education	3
EDEL 482	Drug Abuse Education	3
TOTAL		44

PROFESSIONAL PREPARATION COURSES

Q.H.

Phase I-Analysis

EDTA 206	Human Development	3
EDTA 307	Teaching Analysis	5

Phase II-Development

EDEL 311	Basic Foundations of Reading	3
EDPL 320, 321	Student Teaching	6
EDTA 305	Principles of Evaluation	3
EDTA 306	Learning Theory	3

Phase III-Application

EDEL 316	Elementary School Curriculum	3
EDPL 421	Student Teaching	9
EDPL 408	Teaching Strategies	3
TOTAL		38

TEACHING LABORATORY EXPERIENCE

Practical laboratory experiences in elementary schools identified as Teacher Education Centers will be scheduled for elementary education majors during two quarters of the junior year (Phase II). Daily participation at a Center is required for approximately one-half day, usually in the morning, with a prescribed sequence of campus courses scheduled concurrently for the other one-half day, usually in the afternoon.

Practical experience also occurs in the senior year (Phase III). The student is assigned full-time for one quarter in a Center under the direction of a selected teacher.

RELATED FIELD OF ACADEMIC CONCENTRATION

A minimum of 12 quarter hours is required in a related field of academic concentration such as the following: art, communication, early childhood education, exceptional child education, English, French, humanities, library science, mathematics, music, physical education, sciences, or social sciences.

EARLY CHILDHOOD EDUCATION (Nursery and Kindergarten)

In addition to certification in grades one through six, requirements may be met for certification in early childhood education. Minimum requirements are:

		Q.H.
EDEL 401	Programs in Early Childhood Education	3
EDEL 402	Language Arts in Early Childhood Education	3
EDEL 404	Organization of Instruction in Nursery— Kindergarten Education	3
TOTAL		9

SUGGESTED PROGRAM FOR ELEMENTARY EDUCATION

FIRST YEAR	F	W	S
Communications (ENG 101, SPE 101, ENG 103)	4	3	3
Cultural and Historical Foundations (HUM 201, HIST 201 or 311)	4	4	4
Math Sciences (Math 101)	4		
Scientific Environment (PHYS 301, 302, 303)	3	3	3
Social Sciences (PSY 201)			3
Elective (Math 201)		4	
Academic Concentration Area			3
TOTAL	15	14	16

SECOND YEAR	F	W	S
Math Sciences (STAT, COMP or PHI)	4		
Social Sciences (SOC 201, GEOG, PCL 201)	3	3	3
Scientific Environment (BIOL 103)		4	
Academic Concentration Area	3	3	3
Teaching Analysis (EDTA 307) ¹		5	
Human Development (EDTA 206) ¹			3
Specialization (EDEL 415)			
Electives	3		3
Business Environment	3		
TOTAL	16	15	12

THIRD YEAR	F	W	S
Junior Year Block A (EDEL 301, 311; EDTA 305,306; EDPL 320) ²	15		
Junior Year Block B (EDEL 302, 312, 315, 317; EDPL 321) ³		15	
Specialization (EDEL 407, 408, 409)			9
Engineering Environment			3
Elective			3
TOTAL	15	15	15

¹ Scheduled Fall Quarter for A.A. degree transfer students.

² May be scheduled Winter or Spring Quarter.

³ May be scheduled Fall or Spring Quarter.

FOURTH YEAR

	F	W	S
Elementary Specialization (EDEL 307, 405, 406, 306)	8	6	
Advanced Environmental Electives Education Environment Electives	6	3 6	
Senior Year Block C (EDEL 316; EDPL 408, 421) ¹			15
TOTAL	14	15	15

¹ May be scheduled Fall or Winter Quarter.

SECONDARY EDUCATION

Chairman: *Hall, Bldg. GC 333 Phone 275-2286*

Faculty: *Armstrong, Brumbaugh, Clarke, Fowler, Gurney, Leffler, McGee, E. Miller, A. Olson, Paugh, Siebert, West.*

The Secondary Education specializations are designed to help students develop the competencies needed to teach in the various academic areas found in schools. Although primarily focused on the development and education of adolescents, there are specializations which include teacher preparation in the full range of kindergarten through senior high school, namely: Library Media, Music and Visual Arts. Other specializations available include: Biology, Business Education, Chemistry, English Language Arts, French, Mathematics, Physics, Social Sciences, Spanish, and Speech. Students completing these programs will be eligible for teacher certification in the specialization completed, grades seven through twelve. The courses necessary for Vocational/Technical certification are also available, but no degree program is offered.

Each specialization contains four areas of study: (1) Environmental Studies (69 quarter hours), (2) Professional Preparation (38-44 quarter hours), (3) Specialization (50-76 quarter hours), and (4) Elective hours which vary according to the specialization.

ENVIRONMENTAL STUDIES

General education is provided in the Environmental Studies and requirements must be met by each student in Secondary Education. The program is explained at the beginning of the Academic Programs section.

PROFESSIONAL PREPARATION

In the undergraduate Career Teacher Program, Secondary Education majors are encouraged to follow the three phases (I, II, III) as designed. Phase I should be completed at the end of the sophomore year or, in the case of junior college transfers, during the first quarter of enrollment. Phase II is designed to be taken as a block of courses and should be completed early in the junior year. Since the second phase closely simulates a teacher's working week, it provides students the opportunity to evaluate carefully their chosen profession at a relatively early date in college. Phase III should be completed late in the senior year and is only practical taken in the prescribed 15 quarter-hour block. Students are encouraged to clear their working and class schedules during Phase II and III to allow them to devote full-time to Student Teaching.

PROFESSIONAL PREPARATION COURSES

Q.H.

Phase I-Analysis

EDTA 206	Human Development	3
EDTA 307	Teaching Analysis	5

Phase II-Developmental

EDSE 303	School Program ¹	3
or		
EDSE 305	Secondary School Curriculum	3
EDSE 310-380	Instructional Analysis	4-7
EDTA 305	Principles of Evaluation	3
EDTA 306	Learning Theory	3
EDPL 330	Student Teaching	3
EDPL 321	Student Teaching ¹	3

Phase III-Application

EDPL 430	Student Teaching	9
EDPL 408	Teaching Strategies	3
EDSE 404	Instructional Techniques	3
TOTAL		38-44

¹For K-12 certification only.

TECHNICAL-VOCATIONAL EDUCATION

The State of Florida requires that at least thirty (30) quarter hours of professional education be earned for Standard Rank III Certification in Technical-Vocational Education. The thirty hours must include twenty-one (21) quarter hours in professional vocational teacher education courses and a minimum of five (5) quarter hours in general professional education.

REQUIRED COURSES

(32 Q.H.)

Area A—Foundations

EDVE 401	Philosophy and Principles of Technical-Vocational Education	4
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Area B—Techniques

EDVE 402	Methods of Teaching Technical- Vocational Subjects	4
EDVE 422	Evaluation of Occupational Instruction	4
EDVE 423	Analysis of Learning as Applied to Vocational Education	4

Area C—Special Methods

EDVE 411	Analysis of Vocational Occupations	4
EDVE 421	Curriculum Planning for Vocational Education	4

Area D—General Professional Education

EDTA 206	Human Development	3
EDTA 307	Teaching Analysis	5

SPECIALIZATION AREAS

BIOLOGY SPECIALIZATION (Grades 7-12)

REQUIRED COURSES (57 Q.H.)

BIOL 110	Basic Biology	4
BIOL 350	Principles of Ecology	4
BIOL 360	Genetics	4
BOT 100	General Botany	4
CHEM 111, 112, 113,	General Chemistry (5,3,3)	11
CHEM 115, 264	Chemistry Laboratory (1, 1)	2
MICR 200	General Microbiology	4
ZOOL 100	General Zoology	4
ZOOL 324	Human Anatomy	5
EDSE 461	Biology Laboratory Teaching	3

GENERAL BIOLOGY ELECTIVES (300-400 level)	12
ELECTIVES	33

Certification in General Science may also be attained by completing PHYS 103, Astronomy or GEOL 100, 101, Physical Geology, in addition to the requirements in biology specialization.



SUGGESTED PROGRAM IN BIOLOGY EDUCATION

FIRST YEAR	F	W	S
Biology (BIOL 110, BOT 100, ZOO 100)	4	4	4
Communications (SPE 101, ENG 101, ENG 103)	3	4	3
Cultural and Historical Foundations (Area A, C)	4	4	
Social Science (PSY 201, 202)	3	3	
Electives			7
TOTAL	14	15	14
SECOND YEAR	F	W	S
Biology (MICR 200, ZOO 324)	4	5	
Chemistry (CHEM 111, 112, 113, 115, 264)	5	4	4
Mathematical Sciences (STAT 201)	4		
Professional Education (EDTA 206, 307)			9
Social Sciences (Area A)	3	4	
Electives		3	2
TOTAL	16	16	15
THIRD YEAR	F	W	S
Advanced Environmental (BUS, ENGR, ED)		3	6
Biology (BIOL 350, 360)		4	4
Cultural and Historical Foundations (Area B)		4	
Professional Education—Jr. Block	16		
Electives		3	5
TOTAL	16	14	15
FOURTH YEAR	F	W	S
Biology Electives (300-400 level)	8	4	
Professional Education—Student Teaching			15
Secondary Education (EDSE 461)		3	
Electives	7	8	
TOTAL	15	15	15

BUSINESS EDUCATION SPECIALIZATION (Grades 7-12)

Two programs are available to students. The comprehensive curriculum covers all areas of business, but has emphasis on secretarial practices while the Basic Business and Accounting curriculum stresses general business practices and excludes shorthand instruction.

COMPREHENSIVE CURRICULUM REQUIRED COURSES

(51 Q.H.)

ACCY 211, 212	Basic Concepts (4,4)	8
BADM 371	Business Law	3
ECON 203	Introduction to Aggregate Economics ¹	3
EDBE 101	Introductory Typewriting ²	3

EDBE 102,103	Typewriting Production I, II ²	6
EDBE 201, 202		
203	Principles of Shorthand I, II, III (3,3,3) ²	9
EDBE 301	Shorthand Dictation	3
EDBE 302	Shorthand Transcription	3
EDBE 305	Office Technology	3
EDVE 401	Philosophy & Principles of Technical- Vocational Education	4
EDBE 406	Office Systems and Procedures	3
ENG 301	Professional Report Writing	3
Electives		27

BASIC BUSINESS AND ACCOUNTING CURRICULUM REQUIRED COURSES

(55 Q.H.)

ACCY 211, 212	Basic Concepts (4,4)	8
ACCY 311, 312	Intermediate Accounting (4,5)	9
BADM 371	Business Law	3
ECON 203	Introduction to Aggregate Economics	3
ECON 411	Comparative Economic Systems	3
EDBE 101	Introductory Typewriting ²	3
EDBE 102,103	Typewriting Production I, II (3, 3) ²	6
EDBE 305	Office Technology	3
EDVE 401	Philosophy and Principles of Vocational- Technical Education	4
ENG 301	Professional Report Writing	3
MGMT 301	Management	5
MKTG 301	Marketing	5
ELECTIVES		19

¹ECON 201, 202 are prerequisites.

²May be exempted, but Business Administration courses must be selected as replacements for courses exempted.

SUGGESTED PROGRAM FOR BUSINESS EDUCATION— COMPREHENSIVE SPECIALIZATION

FIRST YEAR	F	W	S
Accountancy (ACCY 211, 212)	4	4	
Business Education (EDBE 101-103)	3	3	3
Communications (ENG 101, 103; SPE 101)	4	3	3
Scientific Environment	4	4	4
Electives			4
TOTAL	15	14	14

SECOND YEAR	F	W	S
Business Education (EDBE 201, 202, 203)	3	3	3
Economics (ECON 201, 202, 203)	3	3	3
Mathematical Sciences (MATH, STAT 201)	4	4	
Professional Education (EDTA 206, 307)			8
Social Sciences (PSY 201, 202)	3	3	
Electives	3	3	
TOTAL	16	16	14

THIRD YEAR	F	W	S
Business Education (EDBE 301, 302, 305)		3	6
Cultural and Historical Foundations (Areas A, B, or C)		4	4
English (ENG 301)		3	
Professional Education—Jr. Block	16		
Secondary Education (EDSE 431, 432)		3	3
Electives		2	3
TOTAL	16	15	16

FOURTH YEAR	F	W	S
Advanced Environmental (ENGR, ED)	3	3	
Business Education (EDVE 401, EDBE 406)	4	3	
Business Law (BADM 371)		3	
Business Electives (300-400 level)	3	3	
Professional Education—Student Teaching			15
Electives	4	3	
TOTAL	14	15	15

SUGGESTED PROGRAM FOR BUSINESS EDUCATION—BASIC BUSINESS AND ACCOUNTING SPECIALIZATION

FIRST YEAR	F	W	S
Accountancy (ACCY 211, 212)	4	4	
Business Education (EDBE 101, 102, 103)	3	3	3
Communications (ENG 101, 102, SPE 101)	4	3	3
Scientific Environment (Areas A, B, or C)	4	4	4
Electives			4
TOTAL	15	14	14

SECOND YEAR	F	W	S
Economics (ECON 202, 203)		4	4
Mathematical Sciences (MATH, STAT 201)	4	4	
Professional Education (EDTA 206, 307)			8
Social Sciences (PSY 201, 202)	3	3	
Cultural and Historical Foundations	4	4	4
Electives	4		
TOTAL	15	15	16

THIRD YEAR	F	W	S
Accountancy (ACCY 311, 312)		4	5
Business (BADM 371, MGMT 301, MKTG 301)		8	5
Business Education (EDBE 305)			3
Professional Education—Jr. Block	16		
Secondary Education (EDSE 451, 432)		4	3
TOTAL	16	16	16

FOURTH YEAR	F	W	S
Advanced Environmental (ENGR, ED)	3	3	
Business Education (EDVE 401)	4		

Economics (ECON 411)	3		
English (ENG 103)		3	
Professional Education—Student Teaching			15
Electives	6	9	
TOTAL	16	15	15

CHEMISTRY SPECIALIZATION (Grades 7-12)

REQUIRED COURSES (65 Q.H.)

CHEM 251	Analytical Fundamentals	2
CHEM 261, 262, 263	Chemistry Fundamentals (4, 3, 3)	10
CHEM 264	Chemistry Fundamentals Laboratory	1
CHEM 321, 322, 323	Organic Chemistry (4, 3, 3)	10
CHEM 324	Organic Laboratory Techniques	2
CHEM 351, 352	Analytical Chemistry (3, 3)	6
EDSE 462, 463	Chemistry Laboratory Teaching (2, 2)	4
CHEM 300-400	Electives (Credit must be earned in Biochemistry)	7

MATHEMATICS REQUIREMENTS (23)

MATH 110, 111	Precalculus Mathematics (4, 4)	8
MATH 211	Analytic Geometry	3
MATH 321, 322, 323	Calculus (4, 4, 4)	12
Electives		25

Certification in Mathematics may also be completed by taking a total of 32 quarter hours in Mathematics including the requirements for Chemistry.

SUGGESTED PROGRAM FOR CHEMISTRY EDUCATION

FIRST YEAR

	F	W	S
Communications (ENG 101, 103, SPE 101)	4	3	3
Chemistry (CHEM 261-264, 251)	4	4	5
MATH 110, 111, 211	4	4	3
PSY 201, 202, SOC 201	3	3	3
TOTAL	15	14	14

SECOND YEAR

	F	W	S
Chemistry (CHEM 321-324)	4	5	3
Cultural and Historical Foundations (Areas A, B)	4	4	
Mathematical (MATH 321-323)	4	4	4
Professional Education (EDTA 206, 307)			8
Electives	3	3	
TOTAL	15	16	15

THIRD YEAR

Advanced Program (BADM, ENGR, ED)
 Chemistry (CHEM 351, 352)
 Cultural and Historical
 Foundations (Area C)
 Mathematical Sciences (STAT 201)
 Professional Education—Jr. Block
 Electives

	F	W	S
		6	3
		3	3
		4	
			4
	16		
		3	4
TOTAL	16	16	14

FOURTH YEAR

Chemistry Electives (300-400 level)
 Professional Education—
 Student Teaching
 Secondary Education (EDSE 461, 462)
 Scientific Environment (Area A or B)
 Social Sciences (Area A)
 Electives

	F	W	S
	4	3	
			15
	2	2	
		4	
	4		
	4	7	
TOTAL	14	16	15

ENGLISH LANGUAGE ARTS SPECIALIZATION (Grades 7-12)

REQUIRED COURSES

(66 Q.H.)

Composition

ENG 101	Composition I	4
ENG 103	Current Literature	3
ENG 208	Principles of Creative Writing	3
ENG 307	Writing Skills	3
EDSE 440	Teaching Language and Composition	3

Literature

ENG 201	Literature of Modern Man	4
ENG 211-213, 314	Survey of English Literature	12
ENG 311-313	Survey of American Literature	9
ENG 415	Readings in Shakespeare	3
ENG 451	British & American Fiction-1500	3
EDSE 441	Literature for Adolescents	3

History and Development of Language

ENG 471	Modern English Grammar	3
ENG 473	Transformational Grammar	3

Reading

EDSE 442	Reading in the Secondary School	4
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Speech

SPE 101	Fundamentals of Oral Communication	3
SPE 371	Speech and Human Relations	3
ELECTIVES		26

Certification in Journalism may be completed by taking nine quarter hours in Journalism including the requirements for English.

Certification in Speech may be completed by taking THA 180 — Study of Drama and Theatre or THA 230 — Interpretation I (3); SPE 261 — English Phonetics and American Dialects (5); and SPE 360 — Argumentation and Debate (4) including the requirements for English.

**SUGGESTED PROGRAM FOR ENGLISH LANGUAGE
ARTS SPECIALIZATION**

FIRST YEAR	F	W	S
Communications (ENG 101, 103, SPE 101)	4	3	3
Cultural and Historical Foundations		4	
English (ENG 201, 208)	3		3
Scientific Environment	4	4	4
Social Sciences (PSY 201, 202, SOC 201)	3	3	3
Electives			3
TOTAL	14	14	16

SECOND YEAR	F	W	S
Cultural and Historical Foundations	4		
English (ENG 211-213, 307, 314)	3	6	6
Mathematical Sciences (MATH, STAT 201)	4	4	
Professional Education (EDTA 206, 307)			8
Social Sciences	4		
Electives (ENG 371 recommended)		6	
TOTAL	15	16	14

THIRD YEAR	F	W	S
Advanced Program		3	6
English (ENG 311, 312, 313, 415)		6	6
Professional Education—Jr. Block	16		
Secondary Education (EDSE 442)			4
Speech (SPE 371)		3	
Electives		3	
TOTAL	16	15	16

FOURTH YEAR	F	W	S
English (ENG 451, 471, 473)	6	3	
Professional Education—Student Teaching			16
Secondary Education (EDSE 440, 441)	3	3	
Electives	6		
TOTAL	15	14	15

**FOREIGN LANGUAGE SPECIALIZATION —
FRENCH (Grades 7-12)**

Required Courses (58 Q.H.)

FRE 101, 102, 103 Elementary French Language and
Civilization (4, 4, 4)12

*May be exempted.

FRE 201, 202, 203	Intermediate French Language and Civilization (4, 4, 4) ¹	12
FRE 301	French Composition	4
FRE 303	French Conversation	4
FRE 311, 312, 313	Survey of French Literature (4, 4, 4)	12
FRE 401	French Phonetics and Diction	4
FRE 300— 400	French Electives	16
EDSE 320	Language as Human Behavior	3
ELECTIVES		16

Certification in a second language may be completed by taking 27 quarter hours in that language including the requirements for French.

FOREIGN LANGUAGE SPECIALIZATION — SPANISH (Grades 7-12)

REQUIRED COURSES (58 Q.H.)

SPA 101, 102, 103	Elementary Spanish Language and Civilization (4, 4, 4) ¹	12
SPA 201, 202, 203	Intermediate Spanish Language and Civilization (4, 4, 4) ¹	12
SPA 301	Spanish Composition	4
SPA 303	Spanish Conversation	4
SPA 311, 312, 313	Survey of Spanish Literature (4, 4, 4)	12
SPA 401	Spanish Phonetics and Diction	4
SPA 300-400	Spanish Electives	16
EDSE 320	Language as Human Behavior	3
ELECTIVES		16

Certification in a second language may be completed by taking 27 quarter hours in that language including the requirements for Spanish.

¹May be exempted.

SUGGESTED PROGRAM FOR FOREIGN LANGUAGE SPECIALIZATION (French or Spanish)

FIRST YEAR	F	W	S
Communications (ENG 101, 103, SPE 101)	4	3	3
Cultural and Historical Foundations (Areas A, C)	4	4	
Language (FRE or SPA 101-103)	4	4	4
Scientific Environment (Two Areas: A, B, or C)	4	4	4
Electives			3
TOTAL	16	15	14

SECOND YEAR	F	W	S
Language (FRE or SPA 201-203)	4	4	4
Mathematical Environment (MATH, STAT 201)	4	4	
Professional Education (EDTA 206, 307)			8
Secondary Education (EDSE 320)	3		
Social Sciences (PSY 201, 202, SOC 201)	4	4	
Electives (ENG 371 recommended)		3	3
TOTAL	15	15	15



THIRD YEAR		F	W	S
Advanced Program (BADM and ED)			3	3
Language (FRE or SPA 301, 303, 311, 313)			8	8
Electives (FRE or SPA 330-400 level)			4	4
Professional Education—Jr. Block		16		
	TOTAL	16	15	15

FOURTH YEAR		F	W	S
Advanced Program (ENGR)		3		
FRE or SPA 401		4	4	
Electives (FRE or SPA 300-400 level)		6	6	
Professional Education—				
Student Teaching				15
Secondary Education (EDSE 421)			3	
Electives (SOC 311 recommended)		3	3	
	TOTAL	16	16	15

LIBRARY MEDIA SPECIALIZATION (Grades K-12)

REQUIRED COURSES (50 Q.H.)

Foundations

EDLS 301	Foundations of Librarianship	4
EDLS 321	Media Center Organization and Operation	4
EDLS 421	Administration of the Library Media Center	4
EDLS 431	Cataloging and Classification	4
EDLS 441	Reference Materials and Services	4
EDLS 451	Utilization of Educational Media	4
EDLS 452	Instructional Media Production	4
EDLS 521	Administrative Principles in Media Centers	4
EDLS 531	Non-Book Materials	4
EDLS 532	Acquisition of Library Materials	4

Literature

EDEL 307	Children's Literature	3
EDSE 441	Literature for Adolescents	3

Reading

EDSE 442	Reading in the Secondary School	4
ELECTIVES		23

SUGGESTED PROGRAM FOR LIBRARY-MEDIA SPECIALIZATION

FIRST YEAR		F	W	S
Communications (ENG 101, 103, SPE 101)		4	3	3

Cultural and Historical Foundations (Areas A, C)	4	4	
Library Media (EDLS 301)			4
Scientific Environment (Areas A, B, or C)	4	4	4
Social Sciences (PSY 201, 202, SOC 201)	3	3	3
TOTAL	15	14	14

SECOND YEAR	F	W	S
Cultural and Historical Foundations	4		
Library Media (EDLS 321, 451, 452)	4	4	4
Mathematical Sciences (MATH, STAT 201)	4	4	
Professional Education (EDTA 206, 307)			8
Social Sciences (Area A)	4	3	
Electives		4	4
TOTAL	16	15	16

THIRD YEAR	F	W	S
Advanced Program (BADM, ENGR and ED)		3	6
Library Media (EDLS 421, 431, 441)	4	4	4
Library Media—Literature (EDEL 307, EDSE 441)	3		3
Professional Education — Elementary (EDTA 305, 306, EDPL 321)	9		
Professional Education—Secondary (EDSE 305, EDPL 330)		6	
Electives			3
TOTAL	16	13	16

FOURTH YEAR	F	W	S
Advanced Program (300-400 electives)	3	3	
Library Media (EDLS 521, 531, 532, EDSE 442)	8	8	
Professional Education—Student Teaching			15
Electives	4	4	
TOTAL	15	15	15

MATHEMATICS SPECIALIZATION (Grades 7-12)

REQUIRED COURSES		(61 Q.H.)
COMP 102	Computer Programming	3
MATH 110, 111	Precalculus Mathematics (4, 4)	8
MATH 211	Analytic Geometry	3
MATH 271	Logic & Proof in Mathematics	3
MATH 272	Mathematical Structures	3
MATH 315	Introduction to Number Theory	3
MATH 318, 319	Linear Algebra (3, 3)	6
MATH 321, 322, 323	Calculus (4, 4, 4)	12
MATH 351, 451	Foundations of Geometry (4, 3)	7
STAT 301	Fundamentals of Probability and Statistics	4

STAT or MATH	Electives	6
EDSE 552	Laboratory Programs in Mathematics	3
ELECTIVES		25

SUGGESTED PROGRAM FOR MATHEMATICS SPECIALIZATION

FIRST YEAR	F	W	S
Communications (ENG 101, 103, SPE 101)	4	3	3
Mathematics (MATH 110, 111, 271, COMP 102)	4	3	6
Scientific Environment (Two Areas A, B, C)	4	4	4
Social Sciences (PSY 201, 202)	3		3
Electives		4	
TOTAL	15	14	16

SECOND YEAR	F	W	S
Cultural and Historical Foundations	4	4	4
Mathematics (MATH 211, 272, 321, 322, 323)	7	7	4
Professional Education (EDTA 206, 307)			8
Social Sciences (Area A)	4		
Electives		3	
TOTAL	15	14	16

THIRD YEAR	F	W	S
Advanced Program (BADM, ENGR and ED)		6	3
Mathematics (MATH 315, 318, 319, 351)		6	7
Professional Education—Jr. Block	16		
Social Science (SOC 201)		3	
Electives			4
TOTAL	16	15	14

FOURTH YEAR	F	W	S
Mathematics (MATH 451, STAT 301, Electives)	6	6	
Professional Education			15
Secondary Education (EDSE 552)	3		
Electives	6	9	
TOTAL	15	15	15

MUSIC SPECIALIZATION (Grades K-12)

REQUIRED COURSES	(76 Q.H.)
MUSICIANSHIP (32)	
MUS 201, 202, 203 Musicianship (4, 4, 4)	12
MUS 301, 302, 303 Musicianship (4, 4, 4)	12
MUS 401, 402 Musicianship (4, 4)	8
PERFORMANCE (44)	

MUS 100	Music Forum	0
MUS 204	Principal Performance (4, 4, 4)	12
MUS 304	Principal Performance (4, 4, 4)	12
MUS 404	Principal Performance (4, 4, 4)	12
MUS 104	Secondary Performance	8
Electives		7

MUSIC SPECIALIZATION (K-12)

To insure synthesis of the many musical elements into a comprehensive whole, the student is assigned to progressively organized sequences in *Musicianship* and *Principal Performance*. Initial placement in these fundamental courses is made by the faculty following a musicianship test and a performance audition to be scheduled by the student before his first registration. Subsequent progress is determined by achievement tests and performance juries administered at specific points in his musical development. The student's rate of progress in these basic sequences depends upon his own initiative. Courses may be exempted by demonstrated proficiency.

A Piano Proficiency Examination must be completed satisfactorily before students can be admitted to MUS 404 in their major performing medium. In addition, all students are required to perform a faculty approved half-recital in their senior year. Enrollment in Music Forum is required each quarter for students enrolled in Principal Performance.

SUGGESTED PROGRAM FOR MUSIC SPECIALIZATION

FIRST YEAR¹

	F	W	S
Communications (ENG 101, 103, SPE 101)	4	3	3
Musicianship (MUS 201, 202, 203)	4	4	4
Principal Performance (MUS 204)	4	4	4
Scientific Environment (Two Areas A, B, C)	4	4	4
TOTAL	16	15	16

SECOND YEAR

	F	W	S
Mathematical Science (MATH, STAT 201)	4	4	
Musicianship (MUS 301, 302, 303)	4	4	4
Principal Performance (MUS 304)	4	4	4
Secondary Performance (MUS 104)	2	2	
Professional Education (EDTA 206, 307)			8
TOTAL	14	14	16

THIRD YEAR²

	F	W	S
Cultural and Historical Foundations (Areas A, C)		4	4
Principal Performance (MUS 404)	4	4	4
Secondary Performance (MUS 104)	1	2	1
Professional Education (EDTA 306, EDSE 303, EDPL 330)	9		
Secondary Education (EDME 401, 402, 403 or 404)	2	2	2
Social Sciences (PSY 201, 202)		3	3
TOTAL	16	15	14

¹MUS 100 — Music Forum, required each quarter except during Student Teaching periods.

²Piano Proficiency Required.

FOURTH YEAR³

	F	W	S
Advanced Program (BADM, ENGR and ED)	3	6	
Musicianship (MUS 401, 402)	4	4	
Professional Education—Student Teaching			16
Social Science (Area A, SOC 201)	4	3	
Electives	3	3	
TOTAL	14	16	15

³A Half-Recital Required.

PHYSICS SPECIALIZATION (Grades 7-12)**REQUIRED COURSES (62 Q.H.)**

PHYS 103	Astronomy	3
PHYS 211, 212, 213	General Physics (4, 4, 4)	12
PHYS 282, 283	Physics Laboratory (1, 1)	2
PHYS 344	Modern Physics for Engineers	3
PHYS 354	Optics and Wave Motion	3
PHYS 380	Scientific Instruments Laboratory	3
PHYS 382	Physics Laboratory — Intermediate	4
PHYS 300-400	Physics Electives	4
EDSE 464, 465	Physics Laboratory Teaching (2, 2)	4

MATHEMATICS REQUIREMENTS

MATH 110, 111	Precalculus Mathematics	8
MATH 211	Analytic Geometry (3)	3
MATH 321-323	Calculus (4, 4, 4)	12
ELECTIVES		28

Certification in Mathematics may also be completed by taking a total of 24 quarter hours in Mathematics including the requirements for Physics.

SUGGESTED PROGRAM FOR PHYSICS SPECIALIZATION

FIRST YEAR	F	W	S
Communications (ENG 101, 102, SPE 101)	4	3	3
Cultural and Historical Foundations (HUM 201)		4	
Mathematical Sciences (MATH 110, 111, 211)	4	4	3
Physics (PHY 103)			4
Scientific Environment (Area A or B)	4		
Social Sciences (PSY 201, 202, SOC 201)	3	3	3
TOTAL	15	14	16

SECOND YEAR			
Mathematics (MATH 321, 322, 323)	F	W	S
	4	4	4
Physics (PHYS 211, 212, 213, 282, 283)	5	5	4
Professional Education (EDTA 206, 307)			8
Social Sciences (Area A)	4	3	
Electives		3	
TOTAL	13	16	16

THIRD YEAR			
Advanced Program (BADM and ED)	F	W	S
		3	3
Mathematics (STAT 201)		4	
Physics (PHYS 380, 344, 354)		3	6
Professional Education—Jr. Block	16		
Electives		4	6
TOTAL	16	14	15

FOURTH YEAR			
Advanced Program (ENGR)	F	W	S
	3		
Cultural and Historical Foundations (Areas B, C)	4	4	
Physics (PHYS 382, PHYS 300-400 Electives)	3	4	
Professional Education—Student Teaching			15
Secondary Education (EDSE 464, 465)	2	2	
Electives	3	3	
TOTAL	15	15	15

SOCIAL SCIENCES SPECIALIZATION

REQUIRED COURSES (64 Q.H.)

ECON 201	Principles of Economics	3
HIST 201, 202, 203	Western Culture & Civilization (4, 4, 4)	12
HIST 311, 312, 313	American History (4, 4, 4)	12
PCL 201	American National Government	4
SOC 201	General Sociology	3
GEOG 301	Resources Geography	3
GEOG 300-400	Electives	3-4
EDSE 471	Trends in Secondary School Social Science	3

DISCIPLINE SPECIALIZATION (20 Q.H.)

Students must have additional credits in history, political science and sociology with at least 12 credits in one area. A list of recommended courses is available from the Secondary Education area. Students may select courses which emphasize Middle, Junior or Senior High subject areas.

ELECTIVES 30

SUGGESTED PROGRAM FOR SOCIAL SCIENCES SPECIALIZATION

FIRST YEAR	F	W	S
Communications (ENG 101, 103, SPE 101)	4	3	3
History (HIST 201, 202, 203)	4	4	4
Scientific Environment (GEOG 100, Area A or C Elective)	4	4	4
Social Sciences (PSY 201, 202, SOC 201)	3	3	3
TOTAL	15	14	14

SECOND YEAR	F	W	S
Cultural and Historical Foundations (HUM, Area B Elective)	4	4	
History (HIST 311, 312, 313)	4	4	4
Mathematical Sciences (MATH, STAT 201)	4	4	
Professional Education (EDTA 206, 307)			8
Social Science (ECON 201, PCL 201, GEOG 301)	3	4	3
TOTAL	15	16	15

THIRD YEAR	F	W	S
Advanced Program (BADM, ENGR, ED)		6	3
Discipline Specialization (HIST, PCL, SOC) ¹		4	4
Professional Education—Jr. Block	16		
Social Studies (GEOG)			3
Electives		5	5
TOTAL	16	15	15

FOURTH YEAR	F	W	S
Discipline Specialization (HIST, PCL, SOC) ¹	8	4	
Professional Education—Student Teaching			15
Secondary Education (EDSE 471)		3	
Electives	7	8	
TOTAL	15	15	15

¹Discipline Specialization: Students must take additional credit in History, Political Science and Sociology with at least 12 credits in one area.

SPEECH SPECIALIZATION (Grades 7-12)

REQUIRED COURSES (58 Q.H.)

Communications:

COM 100	Basic Communications	3
COM 301	Communications as a Behavioral Science	4
COM 363	Group Interaction and Decision Making	4

Speech

SPE 101	Fundamentals of Oral Communications	3
SPE 261	English Phonetics and American Dialects	5
SPE 360	Argumentation and Debate	4
SPE 361	Persuasion Motivation	4
or		
SPE 362	Platform Speaking	4
SPE 366	Speech Composition	4
SPE 473	Directing Extracurricular Activities	3
COM-SPE	Electives	11-12
	Taken from: COM 313, COM 463, COM 562, SPE 371, and SPE 472	

DISCIPLINE SPECIALIZATION (select one)

(12-13 credits)

Drama

THA 230	Interpretation	3
THA 280	Introduction to Acting	4
THA 380	Directing	3
THA 422	High School Play Directing	3

Journalism

JRN 321	Copy Editing	4
JRN 322	Information Processing	4
JRN 300-400	Electives	8

Speech Pathology

SPE 340	Problems of Articulation	4
SPE 364	Physical Basis of Speech and Hearing	5
SPE 469	Survey: Language and Speech Problems	4
ELECTIVES		26

SUGGESTED PROGRAM FOR SPEECH SPECIALIZATION

FIRST YEAR

	F	W	S
Communications (ENG 101, 102, SPE 101)	4	3	3
Scientific Environment (Areas A, B, or C)	4	4	4
Social Sciences (PSY 201, 202, SOC 201)	3	3	3
Speech (COM 100)	3		
Electives		4	4
TOTAL	14	14	14

SECOND YEAR	F	W	S
Cultural and Historical Foundations (Areas A, B, and C)	4	4	4
Discipline Specialization (THA, JRN, or SPE)			4
Mathematical Sciences (MATH, STAT 201)	4	4	
Professional Education (EDTA 206, 307)			8
Social Sciences (Area A)	3	4	
Speech (SPE 261, COM 301)	5	4	
TOTAL	16	16	16

THIRD YEAR	F	W	S
Advanced Program (BADM and ED)	3		3
Discipline Specialization (THA, JRN, or SPE)	4		4
Professional Education—Jr. Block		16	
SPE 360, 361 or 362, 366	8		4
Speech Electives (COM 313, 463, 562; SPE 371, 472)			4
TOTAL	15	16	15

FOURTH YEAR	F	W	S
Advanced Program (ENGR)	3		
Professional Education—Student Teaching			15
Speech (SPE 423, COM 363)	4	4	
Speech Electives (COM 313, 463, 562; SPE 371, 472)	4	4	
Electives	3	7	
TOTAL	14	15	15

Students must choose a 12-credit concentration from either Theatre, Journalism, or Speech Pathology.

VISUAL ARTS SPECIALIZATION (Grades K-12)

REQUIRED COURSES

(64 Q.H.)

Production

ART 201, 202, 203	Design Fundamentals (3, 3, 3)	9
ART 211, 212	Drawing Fundamentals (3, 3)	6
ART 304	Design in Advertising	3
ART 341	Photography	3
ART 351	Painting	3
ART 361	Printmaking	3
ART 381	Ceramics	3
ART 409	Fibers, Fabrics, Textiles and Synthetics	3
ART 410	Metals, Wood, Fibers and Stones	3
ART 435	Environmental Art	4

Criticism (select two)

ART 221, 222, 223	Art History (3, 3, 3)	9
ART 421	Purposes of Art	4
ART 433	Theory and Criticism of Visual Arts	3

Curriculum

EDVA 431	Two-Dimensional Instructional Materials	5
EDVA 432	Three-Dimensional Instructional Materials	5
EDVA 433	Graphic Instructional Materials	5
EDVA 501	Contemporary Art Programs	3
ELECTIVES		13

SUGGESTED PROGRAM FOR VISUAL ARTS SPECIALIZATION

FIRST YEAR	F	W	S
ART 201, 202, 203, 211, 212	3	6	6
Communications (ENG 101, 103, SPE 101)	4	3	3
Scientific Environment (Two Areas A, B, or C)	4	4	4
Social Sciences (PSY 201, 202, SOC 201)	3	3	3
TOTAL	14	16	16

SECOND YEAR	F	W	S
ART 304, 341, 351	3	3	3
Cultural and Historical Foundations (Areas A and C)	4	4	
Mathematical Sciences (MATH, STAT 201)	4	4	
Professional Education (EDTA 206, 307)			8
Social Sciences (Area A)			4
Visual Arts (EDVA 401, 402)	3	3	
TOTAL	14	14	15

THIRD YEAR	F	W	S
Advanced Program (BADM and ED)			6
ART 361, 381, 409	3	3	3
Professional Education—Elementary (EDPL 321, EDSE 303)	6		
Professional Education—Secondary (EDPL 330, EDTA 305, 306)		9	
Visual Arts (EDVA 431, 432, 433)	5	5	5
TOTAL	14	17	14

FOURTH YEAR	F	W	S
Advanced Program (ENGR)	3		
ART 410, 430-Criticism Electives	7	6	
Professional Education—Student Teaching			15
Visual Arts (EDVA 501)		3	
Electives	6	6	
TOTAL	16	15	15

PHYSICAL EDUCATION (Grades K-12)

Chairman: *Powell*, Bldg. GB 343, Phone 275-2595

Faculty: *Clark, Cleland, Gergley, Higginbotham, Hunter, H. P. Martin, Renner, Ridenour, Rohter.*

The Physical Education Program offers a comprehensive curriculum designed to certify a student to teach as a physical education specialist in grades one through twelve. Areas of study required are: (1) Environmental Studies, 69 quarter hours; (2) General Professional Preparation, 45 quarter hours; (3) area of specialization, 46 quarter hours; and (4) Electives, 20 quarter hours.

PHYSICAL EDUCATION SPECIALIZATION

(52 Q.H.)

ZOOL 324	Anatomy	5
EDPE 323	Instructional Analysis of Team Sports	2
EDPE 324	Instructional Analysis of Tennis	2
EDPE 325	Instructional Analysis of Aquatics	2
EDPE 326	Instructional Analysis of Gymnastics and Tumbling	2
EDPE 327	Instructional Analysis of Golf	2
EDPE 328	Instructional Analysis of Wrestling	2
or		
EDPE 329	Choreography of Contemporary Dance	2
EDPE 330	Instructional Analysis of Rhythmics	2
EDPE 350	Coaching Theory	3
EDPE 360	School and Community Recreation	3
EDPE 410	Kinesiomechanics	3
EDPE 421	Exercise Physiology — Cardiovascular	4
EDPE 422	Exercise Physiology — Respiratory	4
EDPE 430	Human Performance Learning	4
EDPE 440	Rehabilitation Training Techniques	3
EDPE 450	Organization and Administration of Physical Education	3

Required Professional Preparation Courses:

Physical Education Major students will be required to successfully complete the Required Professional Courses (Phase I, II, III) outlined on the preceding pages. Physical Education Major students in Phase II will be provided a teacher-coaching experience in Teacher Education Centers during two quarters (one quarter on an elementary level, one quarter on a secondary level) of their junior year; the courses listed in Phase II — Developmental, will be scheduled concurrently. In Phase III (senior year), the student is enrolled, full-time, for one quarter as a student teacher in an accredited elementary or secondary school under the direction of a selected supervising teacher.

HEALTH EDUCATION

In addition to physical education certification in grades one through twelve, students may be certified in Health Education.

Certification Requirements**(17-18 Q.H.)**

EDPE 407	Family Living Concepts	5
EDPE 408	Contemporary Health Hazards	5
MICR 200	General Microbiology	3
MICR 201	General Microbiology Laboratory	1

One of the Following:

CEES 417	Environmental Health	4
MICR 220	Sanitary Sciences and Public Health	3

**SUGGESTED PROGRAM FOR PHYSICAL EDUCATION
SPECIALIZATION**

FIRST YEAR	F	W	S
Communications (ENG 101, SPE 101)	4	3	
Cultural and Historical Foundations (HUM 201) Electives	4	3	4
Mathematical Science	4	3	
Social Science (PSY 201, PCL 201)		3	4
Physical Science			4
Environmental Phys. Educ. (ESPE)	3	3	3
TOTAL	15	15	15

SECOND YEAR	F	W	S
Communications (ENG 301)	3		
Scientific Environment (BIOL 100, ZOOL 100)	4	4	
Anatomy (ZOOL 324)			5
Physical Education (EDPE 360, EDPE 323, 350, 327)	3	5	2
Environmental Physical Education (ESPE)		3	
Human Development (EDTA 206)		3	
Teaching Analysis (EDTA 307)			5
Social Science (SOC 201)			3
Elective	4		
TOTAL	14	15	15

THIRD YEAR	F	W	S
Social Sciences (SOC 310)	4		
Elementary Junior Block (EDPL 320, EDEL 318)	6		
Physical Education (EDPE 330, 410, 324, 325, 430)	5		8
Secondary Junior Block (EDPL 330, EDTA 305, EDTA 306, EDSE 303, EDSE 380)		16	
Advanced Environmental Elective			3
Elective			4
TOTAL	15	16	15

FOURTH YEAR	F	W	S
Physical Education (EDPE 326, 421 328 or 329, 422, 440, 450)	6	12	
Business Environment	3		
Engineering Environment	3		
Advanced Environment Elective	3		
Education Environment		3	
Senior Student Teaching (EDSE 404, EDPL 408, EDPL 421 or EDPL 430)			15
TOTAL	15	15	15

PROFESSIONAL LABORATORY PROGRAM

Chairman: Rothberg, Bldg. GC 323, Phone 275-2401

Faculty: Beadle, Harlacher, Harrow, Hoover, Manning, M. Miller, Sullivan.

Practical laboratory experiences in Teacher Education Centers will be scheduled for elementary, art, physical education, and library science majors during two quarters of the junior year (Phase II). Majors in Secondary Education will be provided one-half day of practical laboratory experiences in Teacher Education Centers during one quarter of the junior year. Daily participation at a Center is required for approximately one-half day of a school day, with a prescribed sequence of courses scheduled concurrently for the other one-half day.

Practical experience also occurs in the senior year. The student is enrolled full-time for one quarter in a public elementary or secondary school under the direction of a selected teacher.

TEACHING ANALYSIS

Chairman: Hernandez, Bldg. GC 322, Phone 275-2426

Faculty: Barr-Johnson, Bollet, Cornell, Craig, Dziuban, Fennell, Hiett, Kysilka, Shadgett, Sulloway, Weidenheimer, A. L. Wood, A. T. Wood.

Offerings in Teaching Analysis serve as initial requirements for prospective teachers and persons contemplating teaching or education affiliated professions, and is available to all students during the sophomore or junior year. Two courses are offered:

Teaching Analysis (5 q.h.)
Human Development (3 q.h.)

During these courses, learners are given an opportunity to analyze, observe, and participate in teacher-like activities to a limited extent. Special emphasis is placed upon the influence of Human Development factors upon teaching. Successful completion of these courses is prerequisite to admission to Phase II — Developmental.

Learning Theory and Evaluation continue Teaching Analysis responsibilities in Phase II. Emphasis is upon classroom applications of generally accepted principles of learning and evaluation.

Teaching Analysis also has responsibility for upper-level environmental studies courses:

EDTA 480	Overview of Education	3
EDTA 481	Trends and the Future of Education	3
EDTA 490	Education in Human Affairs	2

The above courses are offered as partial fulfillment for upper level environmental studies requirements.

ADVANCED STUDIES

Coordinator: *McLain Bldg. GC 303, Phone 275-2436*

The College of Education offers advanced courses for students who have a baccalaureate degree. The courses may be used to meet certificate requirements, for professional or personal updating, for transfer to other institutions (subject to the acceptance criteria of the other institution), and for meeting the requirements for the Master of Education degree.

Courses are available in:

Teaching Specializations

Business
Elementary Education
English
Exceptional Child
Foreign Languages
Mathematics
Music
Physical Education
Reading
Science
Social Sciences
Speech
Visual Arts
Vocational-Technical

Non-Teaching Specializations

Administration
Guidance
Library-Media
Supervision

Certification in the above specialties may be pursued independently of a degree program; a planned Master of Education degree is available in the specialties with the exception of vocational-technical education, library media and guidance. The degree programs meet the requirements for the Florida Rank II Post-graduate certificate and are designed to develop a high level of proficiency in educational personnel. The courses are grouped into three categories:

- A. Core — expanding the person's background in research, learning, developmental and measurement factors.
- B. Curriculum — improving the person's skill in program planning and instructional techniques.
- C. Subject field content — extending the person's knowledge in his specialization field.

The degree requirements for the M.Ed. degree involve all three areas in approximately equal emphasis. The M.A. in Education degree includes the core, a heavy concentration in the subject field and a very limited amount in area B.

ADMISSION TO ADVANCED STUDY

REGULAR STATUS

To be eligible for consideration as a regular, degree-seeking student, the student must file official transcripts showing degrees earned (a baccalaureate degree being the minimal standard) and any credit beyond the baccalaureate degree, and evidence of course work completed for a Rank III Graduate State of Florida teaching certificate.

In addition the student must have **one** of the following:

- A. A "B" (3.0) or higher grade point average in approximately his last ninety quarter hours of undergraduate work at an accredited college or university.
- B. A score of 1000 or higher on the Graduate Record Examination.
- C. 12 hours with at least a "B" (3.0) average completed after becoming a provisional student at Florida Technological University. (See requirements for provisional status.)

POST-BACCALAUREATE STATUS

The student may be placed in the post-baccalaureate category under three conditions:

- A. Temporarily, because his file as described above is incomplete.
- B. He does not wish to pursue a degree program.
- C. He does not meet the standards for regular admission (or does not maintain his grades as a degree-seeker).

Post-baccalaureate status is not a degree-earning category. Whereas a student may earn credit in any number of courses (subject to whatever limitations the State of Florida may impose), these hours will not lead to a degree. If a student is, however, subsequently admitted to degree status, up to 18 hours of post-baccalaureate hours both from Florida Technological University and other sources *may* be considered for transfer into the degree program.

If the student is placed in the post-baccalaureate category because he does not have the grade point average or the GRE score, he may seek admission to the regular category by repeating the GRE and making 1000 or by being selected for provisional status. Those are the only two avenues through which a post-baccalaureate student can become a degree-seeking student. Post-baccalaureate hours can not be used to raise an undergraduate grade point average.

PROVISIONAL STATUS

A limited number of students may attain degree-seeking status via the provisional category. The provisional category is for people who do not have the necessary grade point average or GRE score but who show academic and professional promise. To be considered for provisional status, a student must file an application with the Advanced Studies Coordinator of the College of Education, indicating his desire to be considered for the change of status.

A faculty committee of each professional administrative area within the College of Education will select the students for its provisional positions.

Provisional status is limited to 12 quarter hours of credit. At the completion of twelve quarter hours after becoming a provisional student the student will be changed to regular, if his average for the twelve hours is at least 3.0. If his average is below 3.0, he will be returned to Post-baccalaureate status.

PLANNING OF STUDENT DEGREE PROGRAM

Each advanced student is assigned an advisor from the area which offers the program of his selected specialization. Degree programs must be planned by the student and his advisor prior to completion of his thirteenth hour of graduate degree study. If prior to having an approved program on file with the Dean of the College of Education, a student takes credit at another institution and wants to have the credit transferred to his FTU program, he enrolls in these courses at his own risk.

Post-baccalaureate students can use their advisors for information and consultation but cannot be considered as planning a degree program; hence none of the following information on the degree process applies to post-baccalaureate students.

GENERAL DEGREE REQUIREMENTS

A planned degree program requires a minimum of 45 quarter hours of graduate course work. Course work beyond the 45 hours may be prescribed by the student's advisor where prerequisites are necessary or course deficiencies apparent. A "B" (3.0) or higher average must be maintained in graduate degree work. No more than 9 hours of "C" may be counted in the degree program. If a student earns an excess of 9 hours of "C" or his grade point average drops below a "B", his status will be changed to post-baccalaureate, a non-degree category.

At least 27 quarter hours of graduate credit must be earned as a provisional or regular student in residence at Florida Technological University. Credit earned both at approved Florida Technological University off-campus centers and on campus counts as resident credit. Generally, courses numbered 500 or above are considered graduate credit; a limited number of 400 level courses may, with the approval of the degree program be counted toward the degree requirements. The degree must be completed within five years or the student will lose credit for his early work.

Up to 18 hours may be evaluated for *possible* transfer into the degree program. The eighteen hour total applies to any combination of graduate credit from other universities and from post-baccalaureate work at Florida Technological University. Work from another institution must be at least the "B" level. There is a time limit which results in "elderly" credit being unacceptable. The student should check with his advisor about this. Request for acceptance of transfer may be executed on the Transfer of Credit form when the student is admitted to provisional or regular status and must be supported with an official transcript from the institution where the credit was earned.

ADMISSION TO CANDIDACY

A student will become a candidate for the Master of Education degree when he completes 25 quarter hours of graduate work in a planned program with a "B" (3.0) or higher grade point average and submits the proper application. Applications for Admission to Candidacy are available in the office of the Coordinator of Advanced Studies, College of Education, and must be submitted during the quarter the student is completing the 25th credit hour of his program.

GRADUATE STUDENT LOAD-MAXIMUM

For a graduate student, while fifteen quarter hours of graduate level course work is considered a maximum graduate academic load, twelve quarter hours is considered a usual load. For abbreviated terms, such as a shortened summer term, the maximum load will be less than 12 quarter hours. Because of limitations of the State of Florida, however, the load for any quarter may be more restrictive, resulting in a part-time program for a student.

RESEARCH REQUIREMENT

After completing Fundamental Research Procedures in Education (EDTA 601), a student will design and implement a classroom study or similar research project. The project will be planned and approved in Research Planning (EDEL, EDPE, or EDSE 696). Once the project has been carried out, credit will be granted through Research Report (EDEL, EDPE, or EDSE 698). A copy of the approved report must be submitted to the Office of Advanced Studies, College of Education, before the student's expected graduation date.

COOPERATIVE DOCTORAL PROGRAM

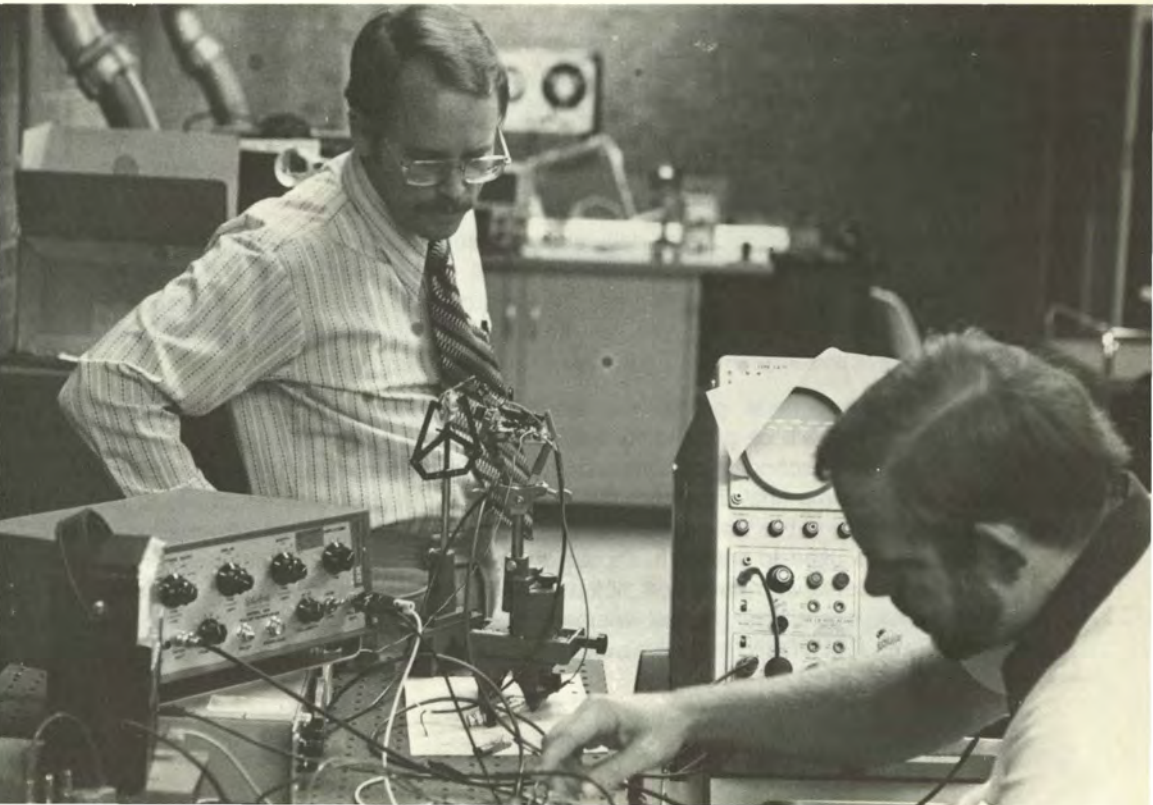
Florida Atlantic University in Boca Raton, Florida, offers two doctoral programs through the College of Education. One is in administration and supervision, which is for people who are interested in decision-making positions in school organizations. The second degree, in curriculum and instruction, having an emphasis on a content subject field discipline, is designed primarily for the junior college teacher, although it could be used in other teaching situations. The subject field areas possible in curriculum and instruction are limited to the fields in which a master's degree is already offered at either FTU or FAU.

The College of Education at Florida Technological University is joining FAU in the doctoral program to offer students an opportunity to do at least some of their work in Orlando, rather than having to move or commute to the Boca Raton area for their entire program. The degree, Doctor of Education, will be awarded by Florida Atlantic University.

COLLEGE OF ENGINEERING

CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCES
ELECTRICAL ENGINEERING AND COMMUNICATION SCIENCES
ENGINEERING MATHEMATICS AND COMPUTER SYSTEMS
ENGINEERING MECHANICS AND MATERIALS SCIENCES
INDUSTRIAL ENGINEERING AND MANAGEMENT SYSTEMS
MECHANICAL ENGINEERING AND AEROSPACE SCIENCES
ENGINEERING TECHNOLOGY

MASTER OF SCIENCE
MASTER OF SCIENCE IN ENGINEERING
MASTER OF SCIENCE IN ENVIRONMENTAL
SYSTEMS MANAGEMENT



COLLEGE OF ENGINEERING

Dean: *Robert D. Kersten*

Assistant Dean: *David L. Block*

The Engineering curriculum at Florida Technological University is directed toward professional objectives. These objectives are best met by completing the bachelor's degree program followed by additional professional education at the graduate level.

The satisfactory completion of an engineering curriculum of a minimum of 192 quarter hours, including environmental studies courses, an engineering core curriculum, and both required and elective courses of study in a selected area of concentration (option) of the student's choice, leads to the degree of Bachelor of Science in Engineering. Graduates of the College of Engineering may pursue a wide variety of careers in private practice, industry, education, and government. The programs of study offered by the College are designed to assist the student in the attainment of his professional career objectives through sound academic preparation.

Satisfactory completion of an engineering technology curriculum of 192 quarter hours, including environmental studies courses, an engineering technology core curriculum, and required and elective courses in a selected technology module of the student's choice, leads to the degree of Bachelor of Engineering Technology. Technology graduates also may seek a wide variety of careers in private practice, industry, and government. Programs of study are applications oriented and are designed to assist the student in attainment of his career objectives.

ADMISSION

Students who wish to be admitted to full freshman standing in engineering studies in the College should present certain secondary school units in addition to the minimum University requirements. A total of $3\frac{1}{2}$ units is required in mathematics, including advanced algebra, geometry, and trigonometry. Calculus is recommended. The laboratory sciences chosen must include at least one unit in physics and one in chemistry. One unit of biology is strongly recommended.

Students who have omissions or deficiencies in subject matter preparation may be required to complete additional university credit course work which may not be applied toward an engineering degree. The most common deficiencies that must be removed before beginning regular engineering course work are algebra, trigonometry, general physics, English and general chemistry.

Subject to the general grade and residence requirements of the University, provisional credit will be granted for transferred course work equivalent to that required in Florida Technological University's engineering program. These provisional credits will become final only after the student has demonstrated his ability to do satisfactory work at the University. Transfer credits in pre-engineering from a junior college will be used to satisfy freshman and sophomore level requirements only. Typically, students who have completed the A.A. degree (or equivalent education) with calculus, chemistry, physics, engineering graphics, and a course in computer science (with FORTRAN) can complete the B.S.E. program in two additional years.

The status of a student and the specific credits acceptable toward his degree will be determined by the Dean of the College.

Students who are well prepared usually will be able to complete the program of study leading to the degree of Bachelor of Science in Engineering in four years. In cases of inadequate secondary school preparation or other extenuating circumstances, the undergraduate program may be extended beyond the normal four-year period.

Students who wish to be admitted to the engineering technology program must possess an Associate of Science (or equivalent education) degree in an appropriate engineering technology area. The engineering technology program provides junior and senior year education. Freshman and sophomore year technology education must be taken at a community college or equivalent. Typically students who have completed the A.S. degree in technology should complete the BET program in two additional years. The status of a student and the specific credits acceptable toward his degree will be determined by the Dean of the College. Provisional credits accepted for transferred course work will become final only after a student has demonstrated his ability to do satisfactory work at the University. Students from engineering programs may transfer into the engineering technology program at the junior level.

GENERAL INFORMATION

Prior to enrolling in courses at the 300 level, each student must: (1) receive approval from the office of the Dean of Engineering, and (2) secure from his advisor an approved course of study for his remaining work. Generally, students with a 2.0 grade point average (C average), or higher will receive approval.

Counseling is provided in order that the student may be aided in making his choice of major. Required and elective courses for each area are listed later in this Bulletin and changes or substitutions may be made only with the approval of the Dean.

Any student whose written or spoken English in any course is unsatisfactory may be reported by the instructor to the Dean. The Dean may assign supplementary work, including additional course work, consistent with the needs of the student. The granting of a degree may be delayed until the work is satisfactorily completed.

A student enrolled in the College as an undergraduate must fulfill all University degree requirements including the Environmental Studies Program, as well as the specialized curriculum requirements for the particular degree option being pursued. To be certified for graduation, a student must achieve a "C" grade point average (2.0) overall and in the courses in his major (option).

BACHELOR OF SCIENCE IN ENGINEERING DEGREE PROGRAM

Engineering is one of the most important evolutionary forces in civilization today. The professional engineer should assume a leading role not only in the conceptual and planning stages but also in the design, manufacturing, construction, operation, and management phases of various engineering facilities and programs. At the same time, the professional engineer should understand that engineering innovation is a means of solving problems in our society and accept a large measure of social responsibility for significant engineering developments.

The professional engineer is the key individual in a team of technical specialists which includes engineering design specialists, engineering operations and management specialists, and engineering technicians. It is the purpose of Florida Technological University's engineering program to provide the broad university level educational opportunities requisite for preparing qualified individuals to make effective contributions through careers in engineering and applied science in our technologically oriented society.

The principal areas of study in the engineering curriculum are devoted to the basic sciences, mathematics and the fundamentals of engineering problem solving. These courses are not training courses for any of the mechanical or manipulative skills, but rather are planned to provide preparation for development, planning, design, research, graduate work; and with certain electives, for operation, production, testing, maintenance and management. This program prepares the student for professional registration, and for the pursuit of graduate work in engineering. In addition, basic engineering programs are increasingly being considered as appropriate preparation for advanced study in other professional areas, e.g., law, medicine, architecture. For assistance and counsel in planning a program, each student will be assigned an advisor from the instructional staff in his chosen area of interest.

The degree requirements consist of:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Engineering Core	89
Additional Option Courses and Technical Electives	34
TOTAL QTR. HOURS REQUIRED	192

Technical electives within a chosen option are selected with the approval of the student's faculty advisor and may be made from 300 level courses or above in engineering, mathematics, the sciences, or business administration.

ENGINEERING CORE REQUIREMENTS¹

The engineering core consists of basic engineering sciences subject matter and is common to all options. Because this requirement is a substantial part of the Bachelor's degree program, it gives the student time to become adjusted and to choose a field of specialization for which he is best suited.

	SUBJECTS	Q.H.
COMP 102	Computer Programming	3
ENGR 101	Engineering Graphics	3
ENGR 103	Creative Design	4
ENGR 151, 152	Chemical Foundations of Engineering	6
MATH 211	Analytic Geometry	3
MATH 321, 322, 323	Calculus (4, 4, 4)	12
ENGR 211	Engineering Concepts	4
ENGR 310	Engineering Analysis — Statics	4
MATH 324	Intermediate Calculus	4
ENGR 311	Engineering Analysis — Dynamics	4

ENGR 312	Mechanics of Materials	5
ENGR 320	Electrical Science	4
ENGR 321	Principles of Electrical Engineering	4
ENGR 322	Electronic Engineering	4
ENGR 323	Electrical Devices and Systems	4
ENGR 331	Thermodynamics	3
ENGR 332	Fluid Mechanics	4
ENGR 341	Engineering Economics Analysis	3
ENGR 342	Systems Analysis	3
ENGR 351	Structure and Properties of Materials	3
ENGR 352	Structure & Properties of Materials II	3
ENGR 361	Man and His Environment	3
ENGR 371	Probability and Statistics for Engineers	3
MATH 331	Differential Equations	4
PHYS 344	Modern Physics for Engineers	3
PHYS 354	Optics and Wave Motion for Engineers	3
ENGR 431	Transport Processes	3
ENG 310	Professional Report Writing	3
ENGR 442	Operations Research	3
ENGR 443	Engineering Administration	3
Biological or Earth Science Elective		3

*Includes scientific requirements and advanced program electives of the Environmental Studies Program.

ACADEMIC OPTIONS

Students in the B.S.E. program must elect an option in one of the departments of the College of Engineering. Each option permits the student to build a professional specialization on the unified engineering core and environmental studies requirements. In the development of this concept, the student is enabled to implement a well-rounded, broad-based approach to engineering problem solutions within the framework of a professional specialization.

CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCES

Chairman: *(Acting) Jenkins, Bldg. EN 415, Phone 275-2841*

Faculty: *Baldwin, Block, Carroll, Hartman, Kersten, McLennon, Wanielista, Yousef, Zulfucar.*

The Department of Civil Engineering and Environmental Sciences offers an option in Environmental Engineering. This option is concerned primarily with the interaction of man and his environment, and the planning, design and control of systems for environmental quality management.

A program of study is available within this option which enables the student to pursue an integrated series or sequence of courses in the major field which includes not only basic and fundamental courses but specialized courses as well in the fields of environmental engineering, transportation engineering, urban systems engineering, water resources engineering and related courses in structural engineering, soil

mechanics, and engineering geology. These specialized courses reflect the contemporary developments and trends in systems analysis, environmental quality management, man-environment interaction as well as several of the traditional areas of civil engineering.

Environmental engineers are responsible for research, development, planning, design and construction of the structures and processes that form the basis of our modern civilization. The Environmental Engineering option encompasses water and atmospheric resources, waste treatment and pollution control, urban planning and engineering aspects of environmental health and natural resources. The curriculum in Environmental Engineering (leading to a B.S.E. degree) is fully accredited by the Engineers' Council for Professional Development.

The following courses are required for all students electing to pursue an option in Environmental Engineering:

	SUBJECTS	Q.H.
*ENGR 341	Engineering Economic Analysis	3
*ENGR 342	Systems Analysis	3
*ENGR 361	Man and His Environment	3
CEES 411	Environmental Engineering — Water Supply	4
CEES 412	Environmental Engineering — Wastewater	4
CEES 414	Water and Wastewater Systems Design	3
*ENGR 431	Transport Processes	3
*ENGR 443	Engineering Administration	3
CEES 401	Environmental Engineering — Chemistry I	3
CEES 402	Environmental Engineering — Chemistry II	3
Technical Electives		17
TOTAL QTR. HOURS REQUIRED		49
*Included in Engineering Core.		

**TYPICAL B.S.E. PROGRAM
ENVIRONMENTAL ENGINEERING OPTION**

FIRST YEAR	F	W	S
Computer Programming (COMP 102)		3	
Composition I (ENG 101)	4		
Engineering Graphics, Creative Design (ENGR 101, 103)	3		4
Engineering Concepts (ENGR 211)			4
Chemical Foundations of Engineering (ENGR 151, 152)	3	3	
Analytic Geometry and Calculus (MATH 211, 321, 322)	3	4	4
Social Environment Electives (include ECON 201)	3	3	3
Fundamentals of Oral Communication (SPE 101)		3	
TOTAL	16	16	15
SECOND YEAR	F	W	S
Engineering Analysis — Statics; Dynamics; Mechanics of Materials (ENGR 310, 311, 312)	4	4	5

Electrical Science (ENGR 320)		4	
Principles of Electrical Engineering (ENGR 321)			4
Engineering Economic Analysis (ENGR 341)	3		
Man and His Environment (ENGR 361)		3	
Probability and Statistics for Engineers (ENGR 371)			3
Calculus; Intermediate Calculus; Differential Equations (MATH 323, 324, 331)	4	4	4
Social Environment Electives	3		
TOTAL	14	15	16

THIRD YEAR

	F	W	S
Electronic Engineering, Electrical Devices and Systems (ENGR 322, 323)	4	4	
Thermodynamics, Fluid Mechanics, Transport Processes (ENGR 331, 332, 431)	3	4	3
Systems Analysis; Professional Report Writing (ENGR 342, ENG 310)	3		3
Optics and Wave Motion for Engineers (PHYS 354)			3
Structure and Properties of Materials; Materials of Engineering (ENGR 351, 352)	3		3
Technical Electives		3	4
Humanities (include HUM 201)	4	4	
Environmental Studies — Advanced Subjects		3	
TOTAL	17	18	16

FOURTH YEAR

	F	W	S
Operations Research (ENGR 442)	3		
Engineering Administration (ENGR 443)		3	
Modern Physics for Engineers (PHYS 344)	3		
Environmental Engineering — Chemistry (CEES 401, 402)	3	3	
Environmental Engineering — Water Supply (CEES 411)	4		
Environmental Engineering — Wastewater (CEES 412)		4	
Sanitary Systems Design (CEES 414)			3
Technical Electives	3	3	4
Environmental Studies — Advanced Subjects		3	3
Biological or Earth Sciences			3
Humanities			4
TOTAL	16	16	17

ELECTRICAL ENGINEERING AND COMMUNICATION SCIENCES

Chairman: Mathews, Bldg. EN 315, Phone 275-2786

Faculty: Erickson, Harden, Lowery, McCarter, Patz, Petrasko, Phillips, Simons,
Towle, Walker.

Electrical Engineers are primarily concerned with the development and utilization of devices and systems which are based on electrical phenomena. The range of application includes computer systems, electronics, control systems, electrical power



utilization, communication systems, medical instrumentation, etc. The electrical engineer can find professional challenges in virtually every facet of modern technology.

The option in Electrical Engineering is designed to present the basic electrical engineering principles which are common to this broad spectrum of application. In addition, courses are offered which present in-depth studies of specific electrical engineering subdisciplines such as analog and digital computer systems, electrical networks and electronics, electromagnetic fields and microwaves, electromechanics and control, power transmission and utilization, communication and information theory, and solid state systems and devices.

Many modern scientific developments are either essentially electrical in character or depend on electrical equipment and technique. Electrical Engineering graduates will find a broad employment opportunity in the field since it enters into much of industry and service where power is utilized, intelligence transmitted, and control exercised over physical, chemical, or mechanical operations. The curriculum in Electrical Engineering (leading to the B.S.E. degree) is fully accredited by the Engineers' Council for Professional Development.

The following courses are required of all students electing to pursue an option in Electrical Engineering:

	SUBJECT	Q.H.
EECS 321	Electrical Networks	4
EECS 322	Electronic Engineering	4
*ENGR 323	Electrical Devices and Systems	4
EECS 341	Electromagnetic Fields	4
*ENGR 342	Systems Analysis	3
*ENGR 352	Materials of Engineering	3
*PHYS 354	Optics and Wave Motion for Engineers	3
*ENGR 371	Probability and Statistics for Engineers	3
EECS 411	Logical Component Design	4
ENGR 421	Linear Control Systems	4
Technical Electives		14
TOTAL QTR. HOURS REQUIRED		50

*Included in Engineering Core.

TYPICAL B.S.E. PROGRAM ELECTRICAL ENGINEERING OPTION

FIRST YEAR	F	W	S
Computer Programming (COMP 102)		3	
Composition I (ENG 101)	4		
Engineering Graphics, Creative Design (ENGR 101, 103)	3		4
Engineering Concepts (ENGR 211)			4
Chemical Foundations of Engineering (ENGR 151, 152)	3	3	
Analytic Geometry and Calculus (MATH 211, 321, 322)	3	4	4
Social Sciences Electives	3	3	
Fundamentals of Oral Communication (SPE 101)		3	
Economics and Man (ECON 201)			3
TOTAL	16	16	15

SECOND YEAR	F	W	S
Engineering Analysis — Statics; Dynamics; Mechanics of Materials (ENGR 310, 311, 312)	4	4	5
Electrical Science (ENGR 320)		4	
Principles of Electrical Engineering (ENGR 321)			4
Engineering Economic Analysis (ENGR 341)	3		
Man and His Environment (ENGR 361)	3		
Probability and Statistics for Engineers (ENGR 371)			3
Calculus; Intermediate Calculus; and Differential Equations (MATH 323, 324, 331)	4	4	4
Social Sciences Elective	3		
Earth or Biological Science Elective		3	
TOTAL	17	15	16

THIRD YEAR	F	W	S
Electronic Engineering; Electrical Devices and Systems (ENGR 322, 323)	4	4	
Thermodynamics; Fluid Mechanics (ENGR 331, 323)	3		4
Systems Analysis (ENGR 342)	3		
Optics and Wave Motion for Engineers (PHYS 354)			3
Structure and Properties of Materials I & II (ENGR 351, 352)	3	3	
Electrical Networks, Electronic Engineering (EECS 321, 322)		4	4
Technical Electives			3
Western Humanities Survey (HUM 201)	4		
Cultural & Historical Foundations Electives		4	4
TOTAL	17	15	18

FOURTH YEAR	F	W	S
Transport Processes; Professional Report Writing (ENGR 431, ENG 310)	3	3	
Operations Research; Engineering Administration (ENGR 442, 443)		3	3
Modern Physics for Engineers (PHYS 344)	3		
Electromagnetic Fields: Logical Component Design (EECS 341, 411)	4	4	
Linear Control Systems (ENGR 421)			4
Technical Electives	3	3	5
Advanced Program Electives	3	3	3
TOTAL	16	16	15

ENGINEERING MATHEMATICS AND COMPUTER SYSTEMS

(Students interested in this program should consult Dr. Schrader of the IEMS department).

In contemporary professional engineering practice, and in research and development activities there is an increasing need for engineers with a high degree of training and capability in the application of mathematics and computers to the modeling,

simulation and solution of complex technical problems. Many of our modern industries and governmental organizations are involved in the design and analysis of highly complex equipments and systems often requiring rigorous mathematical treatment which can only be carried out effectively through the use of modern, high speed, digital/analog/hybrid computer facilities. The computer has become an indispensable partner to the aerospace systems designer, the microelectronic circuit designer, the environmental systems analyst, the industrial manager, and many other professional engineering oriented activities. Thus, students majoring in Engineering Mathematics and Computer Systems will enjoy a broad spectrum of challenging opportunities.

The undergraduate engineering option in Engineering Mathematics and Computer Systems at Florida Technological University is inter-disciplinary and allows considerable flexibility in tailoring programs to fit individual student interest. Requirements for the major are fulfilled by completing thirty-four (34) quarter credit hours of course work in the EMCS or related subject matter along with the engineering core and environmental studies requirements.

The following courses are required for all students electing to pursue this option:

	SUBJECT	Q.H.
*MATH 331	Differential Equations	4
*ENGR 342	Systems Analysis	3
*ENGR 371	Probability and Statistics	3
*ENGR 442	Operations Research	3
*ENGR 443	Engineering Administration	3
ENGR 421	Linear Control Systems	4
EMCS 431	Mini-Computers in Engineering	3
EMCS 432	Principles of Computer Control	3
EMCS 470	Engineering Mathematical Systems	3
EECS 414	Analog Computers	3
IEMS 431	Engineering Applications of Computer Methods	3
IEMS 447	Numerical Methods in Systems Analysis	3
Technical Electives		12
TOTAL QTR. HOURS REQUIRED		50
*Included in Engineering Core.		



TYPICAL B.S.E. PROGRAM ENGINEERING MATHEMATICS AND COMPUTER SYSTEMS OPTION

FIRST YEAR

	F	W	S
Chemical Foundations of Engineering (ENGR 151, 152)	3	3	
Analytical Geometry and Calculus (MATH 211, 321, 322)	3	4	4
Composition I (ENG 101)	4		
Engineering Graphics; Creative Design (ENGR 101, 103)		3	3
Computer Programming (COMP 102)		3	
Man and Environment (ENGR 361)			3
Fundamentals of Oral Communication (SPE 101)			3
Principles of Economics (ECON 201)	3		
Social Sciences Elective	3	3	3
TOTAL	16	16	16

SECOND YEAR

	F	W	S
Engineering Concepts (ENGR 211)	4		
Calculus, Differential Equations (MATH 323, 324, 331)	4	4	4
Electrical Science — Statics (ENGR 320, 310)		4	4
Engineering Economy; Probability and Statistics for Engineers (ENGR 341, 371)	3	3	
Linear Control Systems (ENGR 421)			3
Cultural or History Elective (HUM 201 required)	4	4	
Professional Report Writing (ENG 310)			3
Scientific Environmental Elective			3
TOTAL	15	15	17

THIRD YEAR

	F	W	S
Dynamics; Thermodynamics; Fluid Mechanics (ENGR 311, 312, 332)	4	3	4
Cultural or History Elective	4		
Mechanics of Materials (ENGR 312)			5
Systems Analysis; Operations Research, Engineering Administration (ENGR 342, 442, 443)	3	3	3
Modern Physics, Optics and Wave Motion (PHYS 344, 354)	3	3	
Engineering Math Systems (EMCS 470)	3		
Numerical Methods in Systems Analysis (IEMS 447)		3	
Technical Elective			4
Environmental Studies — Advanced Subjects		3	
TOTAL	17	15	16

FOURTH YEAR	F	W	S
Structure and Properties of Materials I & II (ENGR 351, 352)	3	3	
Principles of Electrical Engineering; Electrical Networks; Electronic Engineering (ENGR 321, 322, 323)	4	4	4
Analog Computers (EECS 414)		3	
Mini-computers in Engineering; Principles of Computers (EMCS 431, 432)		3	3
Engineering Applications of Computer Methods (IEMS 431)			3
Transport Processes (ENGR 431)	3		
Technical Electives	4		5
Environmental Studies (Advanced)	3	3	
	TOTAL	17	15
TOTAL QTR. HOURS REQUIRED		16	191

ENGINEERING MECHANICS AND MATERIALS SCIENCES

(Students interested in this program should consult Dr. Evans,
MEAS, Phone 275-2416)

Engineers in the field of materials science are instrumental in providing the materials (metals, polymers, ceramic, concrete, composites) which make it possible to build the structures, machines, public works, transportation systems, energy conversion systems, space craft and industrial products conceived by their engineering colleagues. The Materials Engineer has technical expertise in both the properties of materials and the reasons why materials have these properties. In addition he may be involved in developing new materials or in the reuse and recycling, or improvement of existing materials.

The option in Materials Engineering, which is the departmental emphasis at the undergraduate level, encompasses the principal areas of importance in this very broad field. These areas are the structure and properties of engineering materials, materials engineering, metallurgy, micromechanics, and composite materials. It should be noted that much of the field of materials science is involved with experimental activity and the curriculum includes appreciable experimental work.

Innovative use of materials is essential in every engineering system from the simplest to the most sophisticated. Consequently, our highly industrialized society will continue to demand increasing numbers of engineers competent in materials science. Graduates may find employment in a wide range of activities from producers of metals, ceramics, and polymers to industries producing computers and semiconductor devices, dental materials and medical appliances, to a host of items fabricated from plastics and in the newly emerging field of recycling of materials resources. In these activities, materials engineers may be found in research, development, operations, or design functions.

The following courses are required for all students electing to pursue an option in Materials Engineering:

	SUBJECT	Q.H.
*ENGR 342	Systems Analysis	3

*PHYS 344	Modern Physics for Engineers	3
*ENGR 352	Structure and Properties of Materials II	3
*ENGR 371	Probability and Statistics for Engineers	3
EMMS 413	Thermodynamic Properties of Materials	3
EMMS 414	Mechanical Properties of Materials	3
EMMS 421	Theory of Crystalline Solids	3
EMMS 430	Structure and Properties of Alloys	3
*ENGR 431	Transport Processes	3
EMMS 433	Physical Metallurgy	3
EMMS 435	Structure and Properties of Ceramics and Polymers	3
Technical Electives		16
TOTAL QTR. HOURS REQUIRED		49

*Included in Engineering Core.

TYPICAL B.S.E. PROGRAM MATERIALS ENGINEERING OPTION

FIRST YEAR	F	W	S
Computer Programming (COMP 102)			3
Composition I (ENG 101)	4		
Engineering Graphics; Creative Design (ENGR 101, 103)	3	4	
Engineering Concepts (ENGR 211)			4
Chemical Foundations of Engineering (ENGR 151, 152)	3	3	
Analytic Geometry; Calculus (MATH 211, 321, 322)	3	4	4
Introduction to Speech (SPE 101)		3	
Cultural & Historical Foundations Electives	4	4	4
TOTAL	17	18	15

SECOND YEAR	F	W	S
Engineering Analysis — Statics; Dynamics; Mechanics of Materials (ENGR 310, 311, 312)	4	4	5
Electrical Science (ENGR 320)	4		
Thermodynamics (ENGR 331)			3
Engineering Economic Analysis (ENGR 341)		3	
Structure and Properties of Materials I & II (ENGR 351, 352)	3	3	
Calculus, Intermediate Calculus; Differential Equations (MATH 323, 324, 331)	4	4	4
Social Sciences Electives (including ECON 201)	3	3	
Theory of Crystalline Solids (EMMS 421)			3
TOTAL	18	17	15

THIRD YEAR	F	W	S
Principles of Electrical Engineering; Electronic Engineering; Electrical Devices Systems (ENGR 321, 322, 323)	4	4	4
Fluid Mechanics; Thermodynamics and Transport Processes (ENGR 332, 431)		4	4
Man and His Environment (ENGR 361)			3
Probability and Statistics for Engineers (ENGR 371)	3		
Professional Report Writing (ENG 310)	3		
Social Sciences Elective	3	3	
Optics and Wave Motion for Engineers (PHYS 354)			3
Physical Metallurgy, Mechanical Properties of Materials, Thermodynamics Properties of Materials (EMMS 433, 414, 413)	3	3	3
TOTAL	16	14	17

FOURTH YEAR	F	W	S
Systems Analysis (ENGR 342)	3		
Operations Research (ENGR 442)		3	
Engineering Administration (ENGR 443)			3
Modern Physics for Engineers (PHYS 344)	3		
Structures and Properties of Alloys; Structures and Properties of Ceramics and Polymers (EMMS 430, 435)	3	3	
Technical Electives	3	6	7
Scientific Environment Elective			3
Environmental Studies — Advanced Program	3	3	3
TOTAL	15	15	16

INDUSTRIAL ENGINEERING AND MANAGEMENT SYSTEMS

Chairman: *Schrader*, Bldg. EN 412, Phone 275-2236

Faculty: *Bauer, Clapp, Dennis, Doering, Gambrell, Klee, Lindenberg.*

The option in Industrial Engineering is concerned principally with the design, improvement, and installation of integrated systems of men, materials, and equipment for operations through the application of the principles of the engineering, mathematical, physical, and behavioral sciences.

The program of study available within this option enables the student to pursue an integrated series or sequence of courses in the major field which includes not only basic and fundamental courses but specialized courses as well, in the areas of management standards development, production and inventory control, project management, work analysis and design, management information systems, computer simulation, operations research, industrial facilities planning and design, and human engineering. These specialized courses reflect the contemporary developments and trends in each of these areas with emphasis on uses of the digital computer in appropriate courses.

There is a growing tendency on the part of industry, government and institutions to select engineering personnel for managerial positions. Because of this the IEMS courses are oriented to systems management principles and concepts so as to enable the Industrial Engineering graduate to accept and succeed in these opportunities. The curriculum in Industrial Engineering (leading to the B.S.E. degree) is fully accredited by the Engineers' Council for Professional Development.

The following courses are required for all students electing to pursue an option in Industrial Engineering.

	SUBJECTS	Q.H.
IEMS 301	Management Standards	4
*ENGR 341	Engineering Economic Analysis	3
*ENGR 342	Systems Analysis	3
*ENGR 371	Probability and Statistics for Engineers	3
IEMS 424	Management Control Systems I	3
*ENGR 442	Operations Research	3
*ENGR 443	Engineering Administration	3
IEMS 461	Human Engineering	3
IEMS 432	System Simulation with Digital Computers	3
IEMS 447	Numerical Methods in Systems Analysis	3
IEMS 434	Industrial Information Systems I	3
IEMS 414	Industrial Facilities Planning and Design	4
Technical Electives		11
TOTAL QTR. HOURS REQUIRED		49
*Included in Engineering Core.		

TYPICAL B.S.E. PROGRAM INDUSTRIAL ENGINEERING OPTION

FIRST YEAR	F	W	S
Chemical Foundations of Engineering (ENGR 151, 152)	3	3	
Analytical Geometry and Calculus (MATH 211, 321, 322)	3	4	4
Composition I (ENG 101)	4		
Engineering Graphics; Creative Design (ENGR 101, 103)		3	4
Computer Programming (COMP 102)		3	
Man and Environment (ENGR 361)			3
Fundamentals of Oral Communication (SPE 101)			3
Principles of Economics (ECON 201)	3		
Social Sciences	3	3	3
TOTAL	16	16	17

SECOND YEAR	F	W	S
Engineering Concepts (ENGR 111)	4		
Calculus; Differential Equations (MATH 323, 324, 331)	4	4	4
Electrical Science; Statics (ENGR 321, 311)		4	4
Engineering Economy; Probability and Statistics for Engineers (ENGR 341, 371)	3	3	

Management Standards (IEMS 301)				4
Cultural or History Elective (HUM 201 required)	4	4		
Professional Report Writing (ENG 310)				3
Scientific Environmental Elective				3
TOTAL	15	15		18

THIRD YEAR

	F	W	S	
Dynamics; Thermodynamics, Fluid Mechanics (ENGR 311, 331, 332)	4	3	4	
Cultural or History Elective	4			
Mechanics of Materials (ENGR 312)			5	
Systems Analysis; Operations Research, Engineering Administration (ENGR 342, 442, 443)	3	3	3	
Modern Physics, Optics and Wave Motion (PHYS 354, 344)	3	3		
Management Control Systems I; System Simulation with Digital Computers (IEMS 424, 432)	3	3		
Technical Electives			4	
Environmental Studies (Advanced)		3		
TOTAL	17	15	16	

FOURTH YEAR

	F	W	S	
Structure and Properties of Materials I & II (ENGR 351, 352)	3	3		
Principles of Electrical Engineering; Electrical Networks; Electronic Engineering (ENGR 321, 322, 323)	4	4	4	
Numerical Methods in Systems Analysis; Industrial Information Systems I (IEMS 447, 434)		3	3	
Human Engineering, Industrial Facilities Planning and Design (IEMS 461, 414)		3	4	
Transport Processes (ENGR 431)	3			
Technical Electives	3		4	
Environmental Studies — Advanced Subjects	3	3		
TOTAL	16	16	15	

MECHANICAL ENGINEERING AND AEROSPACE SCIENCES

Chairman: *Evans*, Bldg. EN 115, Phone 275-2416

Faculty: *Beck, Goldstein, Hagedoorn, Nimmo, Nuckolls, Rapson, Smith, Ventre, Wall.*

The Department of Mechanical Engineering and Aerospace Sciences is primarily concerned with dynamic physical systems such as transportation, production and energy conversion. Because such systems involve an energy source, the mechanical or aerospace engineer is concerned with the application of the basic laws of the engineering sciences to the conversion, transfer and control of the energy. When dealing with problems of this nature, the engineer must consider the economic constraints and the social implications of the solutions which he proposes.

The Mechanical Engineering option provides the student with the opportunity to pursue his educational objectives within the framework of this broad theme. Primary emphasis is given to the departmental subdisciplines of aerospace sciences, flight vehicle structures, measurements systems engineering, mechanical systems design and control, energy conversion and power systems, and thermal sciences.

The program is specifically designed to give the student a broad-based undergraduate engineering science program in order that he will have sufficient knowledge to converse with specialists in other fields of engineering and to analyze on his own the more basic problems in these fields. By judiciously selecting courses from the departmental subdisciplines, a firm foundation is laid in order that the student will obtain the theoretical tools and the design methodology to successfully pursue a career in the mechanical or aerospace engineering professions. The Curriculum in Mechanical Engineering (leading to the B.S.E. degree) is fully accredited by the Engineers' Council for Professional Development.

The following courses are required for all students electing to pursue an option in Mechanical Engineering:

	SUBJECTS	Q.H.
*ENGR 323	Electrical Devices	4
MEAS 341	Kinematics and Kinetics of Machines	3
*ENGR 342	Systems Analysis	3
MEAS 342	Machine Design and Analysis	4
MEAS 351	Measurement Systems	3
*ENGR 352	Structure and Properties of Materials II	3
*ENGR 371	Probability and Statistics	3
MEAS 423	Vibrations	4
*ENGR 431	Transport Processes	3
MEAS 482	Heat Transfer	4
Technical Electives		16
TOTAL QTR. HOURS REQUIRED		50

*Included in Engineering Core.

TYPICAL B.S.E. PROGRAM MECHANICAL ENGINEERING OPTION

FIRST YEAR	F	W	S
Analytic Geometry; Calculus (MATH 211, 321, 322)	3	4	4
Engineering Graphics; Creative Design; Engineering Concepts (ENGR 101, 103, 211)	3	4	4
Chemical Foundations of Engineering (ENGR 151, 152)	3	3	
Computer Programming (COMP 102)		3	
Social Environment Courses	3		3
Western Humanities Survey (HUM 201)			4
Composition I; Fundamentals of Oral Communication (ENG 101, SPE 101)	4	3	
TOTAL	16	17	15

SECOND YEAR

	F	W	S
Calculus; Differential Equations; Intermediate Calculus (MATH 323, 331, 324)	4	4	4
Engineering Analysis — Static; Mechanics of Materials; Engineering Analysis — Dynamics (ENGR 310, 312, 311)	4	5	4
Man and His Environment; Electrical Science (ENGR 361, 220)		3	4
Professional Report Writing II (ENG 310)			3
Social Environment Courses	3	3	
Humanities (300 level)	4		
TOTAL	15	15	15

THIRD YEAR

	F	W	S
Kinematics and Kinetics of Machines; Machine Design and Analysis (MEAS 341, 342)	3	4	
Thermodynamics, Thermodynamics and Transport Processes; Systems Analysis (ENGR 331, 431, 342)	3	3	3
Engineering Economic Analysis; Fluid Mechanics; Probability and Statistics for Engineers (ENGR 341, 332, 371)	3	4	3
Principles of Electrical Engineering; Electronic Engineering; Electrical Devices Systems (ENGR 321, 322, 323)	4	4	4
MEAS (approved elective)			4
Humanities (300 level)	4		
Science Environment			3
TOTAL	17	15	17

FOURTH YEAR

	F	W	S
Measurement Systems; Vibration Analysis; Heat Transfer (MEAS 351, 423, 482)	3	4	4
MEAS (3 quarters of approved electives)	4	4	4
Structure and Property of Materials; Materials of Engineering (ENGR 351, 352)	3	3	
Operations Research; Engineering Administration (ENGR 442, 443)		3	3
Modern Physics for Engineers; Optics and Wave Motion for Engineers (PHYS 354, 344)	3	3	
BADM (300 level)	3		
EDUC (48-)			3
ENGR (380 or 48-)			3
TOTAL	16	17	17



BACHELOR OF ENGINEERING TECHNOLOGY DEGREE PROGRAM

Engineering Technology is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities. It lies in the occupational spectrum between the craftsman and the engineer closer to the engineer.

The four year engineering technology graduate will provide a vital link in the engineering — fabrication/construction — facility operations chain. He will be practice and applications oriented while at the same time, possessing a broad and comprehensive education in the field. As such he will be a key individual in teams of technical specialists dealing with the environment today. Completion of the required curriculum will prepare qualified individuals to make significant contributions to society and will allow them to progress into responsible technical and management positions.

Principal areas of study in the engineering technology curriculum, building on a sound base attained through the AS degree, will include mathematics and communications. In addition, substantial additional work will be taken in the technical sciences and technical speciality. The courses will include theory and practice along with training. Hence they will provide a sound technical base for subsequent work. For assistance and counsel in planning a program, each student will be assigned an advisor to assist him in selecting the best course sequence to meet his career objectives.

The degree requirements consist of:

Typical Distribution of Credits:

Environmental Studies Program	69
Basic (54)	
Community College (39) ¹	
FTU (15)	
Advanced (15)	
Additional Basic Science, Mathematics and Technical Sciences (included in Technology Core).	50
Community College (9)	
FTU (41)	
Technical Specialty and Related Studies	73
Community College (48)	
FTU (25)	
TOTAL: Community College (96) ¹	
FTU (96)	

¹Includes algebra, trigonometry, basic science, English, speech, humanities and social sciences.

ENGINEERING TECHNOLOGY COURSE REQUIREMENTS

The engineering technology curriculum includes the Environmental Studies Program, additional basic sciences, and technical specialty courses with related electives distributed as noted above. The program to be taken at the University, assuming good

articulation with the Associate of Science program being transferred includes the following:

SUBJECTS

Q.H.

ENVIRONMENTAL STUDIES AND ADDITIONAL BASIC COURSES

MATH 311	Applied Calculus	4
MATH 312	Applied Calculus	4
CHEM	Chemistry	6
	Science Elective	6
HUM	Humanities Elective	6
	Social Sciences Elective	9
BADM 3 — —	Business Administration Elective	3
ENGR 48 —	Engineering Elective	3
EDTA	Education Elective	3
	Advanced Program Electives	6
ENG 310	Professional Report Writing	3
TOTAL QTR. HOURS REQUIRED		53

ENGINEERING TECHNOLOGY COURSES — TECHNICAL SCIENCES

COMP 102	Computer Programming	3
ENT 304	Technical Economic Analysis	3
ENT 305	Applied Mechanics	4
ENT 306	Materials and Processes*	4
ENT 401	Electricity and Electronics*	5
ENT 402	Strength of Materials	4
ENT 403	Applied Thermodynamics	4
TOTAL QTR. HOURS REQUIRED		18

ENGINEERING TECHNOLOGY COURSES — TECHNICAL SPECIALTY

ENT	Technology Module	21
ENT 303	Problem Analysis	4
TOTAL QTR. HOURS REQUIRED		25

*Typically taken at Community College.

†Credit shown is maximum transferrable under this program.

TYPICAL B.E.T. PROGRAM

JUNIOR YEAR	F	W	S
Computer Programming (COMP 102)	3		
Applied Calculus; Chemical Foundations (MATH 311, 312)	4	4	
Science Elective	4	4	4
Technology Module (ENT)	3	3	3
Problem Analysis (ENT 303)			4
Technical Economic Analysis (ENT 304)	3		
Applied Mechanics (ENT 305)		4	
Strength of Materials (ENT 402)			4
TOTAL	17	15	15

SENIOR YEAR	F	W	S
Applied Thermodynamics (ENT 403)	4		
Technology Module (ENT)	6	3	3
Business Administration (BADM)		3	
Humanities Elective (HUM)		4	4
Social Sciences Elective	3		4
Engineering Elective (ENGR 48—)	3		
Education Elective (EDTA)		3	
Professional Report Writing (ENG 310)			3
Advanced Electives		3	3
TOTAL	16	16	17

ENGINEERING TECHNOLOGY

Chairman: (Acting) Griffith, Bldg. EN 415, Phone 275-2841

Faculty: Skinner

The options (modules) in Engineering Technology are concerned principally with the details of design, maintenance, operation, environmental monitoring and the fabrication/construction functions. The work of the technologist is in direct support of the engineer and the emphasis is on material results and details as constructed, within the broader conceptual and systems processes of the engineer.

Four engineering technology modules (options) are offered as shown. The courses listed in each module are recommended for all students electing to pursue that option. Any deviation from the recommended courses in the option must be approved by the Department Chairman and the Dean.

ELECTRONICS TECHNOLOGY MODULE

The option in Electronics Technology is designed to present the electronics principles beyond the first two years of study that are essential for installation, operation, maintenance and design support of electrical/electronics equipment and facilities. Typical community college AS Degree programs used for entrance to FTU's Electronics Technology option are Electronic, Electrical and Instrumentation Technologies.

Courses		Q.H.
ENT 321	Electronics Circuits	5
ENT 322	Digital Circuits	4
ENT 421	Computer Systems	3
ENT 422	Antennas and Propagation	3
ENT 423	Feedback Control	3
ENT 424	Communications Systems	3
		<hr/> 21

ENVIRONMENTAL CONTROL TECHNOLOGY MODULE

The option in Environmental Control Technology is designed to give the student upper level courses in water, wastewater, air pollution, solid wastes, sampling and analysis, and control processes that are essential for environmental operations control. Typical community college AS Degree programs used for entrance to FTU's Environmental Control Technology option are Environmental Control, Civil, and Chemical Technologies.

Courses		Q.H.
ENT 331	Hydraulics/Hydrology	3
ENT 332	Water Supply Systems	3
ENT 333	Wastewater Systems	3
ENT 431	Treatment Plant Analysis and Control	3
ENT 432	Environmental Sampling and Analysis	3
ENT 433	Air Pollution Control	3
ENT 434	Solid Wastes Management	3

DESIGN TECHNOLOGY MODULE

The option in Design Technology will present the student with the knowledge and skills needed for application to problems concerning specifications, calculations, and procedures involving the design, redesign, testing and operations of mechanical parts, units and assemblies. Typical community college AS Degree programs used for entrance to FTU's Design Technology option are Mechanical, Drafting Design, Aerospace and Air Conditioning Technologies.

Courses		Q.H.
ENT 341	Contracts and Specifications	3
ENT 342	Electro-Mechanical Design	4
ENT 343	Product Design	4
ENT 441	Structural Design	4
ENT 442	Design Integration	3
ENT 443	Senior Project	3
		<hr/> 21

OPERATIONS TECHNOLOGY MODULE

The option in Operations Technology is designed to present the management, supervisory and methods courses that are essential for operations control. A student electing the Operations Technology option may concentrate his studies with emphasis on manufacturing or on construction. Typical community college AS Degree programs leading to FTU's Operations Technology option with a construction emphasis are Civil, Building Construction and Architecture Technologies and with a manufacturing emphasis are Drafting, Mechanical, Industrial Supervision, and Quality Control Technology.

Courses		Q.H.
ENT 352	Cost Estimating and Analysis	3
ENT 451	Process Planning and Scheduling	3
ENT 452	Occupational Safety	3

and elect 12 credits from courses in either Group A or B*

Group A—Courses giving emphasis to a manufacturing concentration and taken from:

ENT 351	Work Analysis	3
ENT 353	Computer Methods in Industry	3
ENT 442	Design Integration	3
ENT 453	Quality Control	3
ENT 454	Maintenance Operation	3

Group B—Courses giving emphasis to a construction concentration and taken from:

ENT 341	Contracts and Specifications	3
ENT 441	Structural Design	4
ENT 442	Design Integration	3
ENT 453	Quality Control	3
ACCY 300	Financial Accounting	5
BADM 371	Business Law	3
MGMT 301	Management	3

*All electives must be approved by the student's advisor.

INTERDISCIPLINARY PROGRAMS

It is the desire of the College of Engineering to provide interdisciplinary programs to selected students who desire to prepare for some very specialized professional objective. Interested students should consult the Dean for the appointment of a faculty advisor knowledgeable in the special interdisciplinary area. Programs presently under development include:

- Biomedical Engineering
- Engineering Chemistry
- Engineering Design
- Engineering Operations
- Engineering Physics
- History of Engineering and Technology
- Public Systems Analysis
- Systems Engineering

GRADUATE PROGRAM

The College of Engineering offers graduate work leading to the Master of Science in Engineering, Master of Science, or Master of Science in Environmental Systems Management degrees. The programs are designed to provide for advanced professional engineering education (M.S.E.) or specialized education in selected areas (M.S. or M.S.E.S.M.).

Interested students should review information relative to admissions requirements presented in the Graduate Studies section of the catalog. An early contact with the appropriate department chairman is advisable to assist the student with an orderly and effective program of study. Each of the six departments in the college are cooperating in the graduate program activity.

DEGREE REQUIREMENTS

MASTER OF SCIENCE IN ENGINEERING DEGREE

Advanced professional engineering competencies are achieved through the M.S.E. program. This program is intended for those who have attained an engineering bachelor's degree. Based on the very strong undergraduate, inter-departmental, college-wide engineering core plus option approach, this program leads to the M.S.E. degree, also based on an interdisciplinary approach, but at the department level. Thus the effective and efficient unified core approach is continued through the master's level.

TYPICAL PROGRAM OF STUDY

Academic Area	Credits
Departmental Core Courses (at least one advanced course in each departmental subdiscipline beyond B.S.E. requirements)	18
Additional subdiscipline-specialty courses	9 - 15
Additional advanced mathematics, computer systems, natural sciences, engineering sciences, or appropriate supportive areas (beyond B.S.E. core requirements or equivalent)	9 - 15
Thesis or Research Report	9 or 3
TOTAL M.S.E. PROGRAM	45

M.S.E. DEPARTMENTAL COURSE REQUIREMENTS

Each student will select, with the approval of his graduate committee, a minimum of 18 credits in departmental subdiscipline courses as noted below for the professional options. Additional course work may be selected in one of the subdiscipline specialty areas to provide program depth. The student is referred to the course description section of the catalog for further information.

ENVIRONMENTAL ENGINEERING OPTION — at least one course from each of the following subdiscipline groupings:

- Environmental Engineering
- Water Resources Engineering
- Transportation and Urban Systems Engineering
- Structures, Soil Mechanics and Foundations, Geology

ELECTRICAL ENGINEERING OPTION — at least one course from each of five subdiscipline groupings other than the chosen specialization area:

- Circuit Theory
- Communications Systems
- Control Systems
- Digital Systems
- Electromagnetic Theory
- Electronic Circuits
- Hybrid Systems
- Optical Communication Systems

ENGINEERING MATHEMATICS and COMPUTER SYSTEMS OPTION — the core requirements will be met by the courses listed plus one course from each subdiscipline area listed:

- Engineering Data Reduction (EMCS 530)
- Engineering Mathematical Analysis (EMCS 572)
- Discrete Processes (EMCS 575)
- and subdiscipline areas

Engineering Mathematics
 Computer Systems
 Systems Design

INDUSTRIAL ENGINEERING OPTION — at least one course from each of the following subdiscipline groupings:

Computer Simulation
 Human Engineering
 Industrial Engineering
 Management Systems
 Operations Research
 Systems Engineering

MATERIALS ENGINEERING OPTION — the following courses will meet the core requirement:

EMMS 501	Electron Microscopy I	3
or		
EMMS 502	X-Ray Diffraction	3
EMMS 600	Physical Metallurgy I	3
EMMS 610	Mechanical Metallurgy I	3
EMMS 620	Physical Ceramics	3
EMMS 630	Polymer Science	3
One course from the Mechanics and Structures group		

MECHANICS AND STRUCTURES OPTION — the following courses will meet the core requirement:

EMMS 541	Inter-Mechanics of Materials	4
EMMS 642	Continuum Mechanics	4
EMMS 641	Theory of Elasticity	4
or		
EMMS 652	Theory of Plates and Shells	4
EMMS 661	Advanced Dynamics	3
One course from the Materials Engineering group		

MECHANICAL ENGINEERING OPTION — the core requirements for all students will be met by the courses listed:

MEAS 538	Environmental Thermodynamics	3
or		
MEAS 680	Classical Thermodynamics	3
MEAS 542	Principles of Design	3
MEAS 643	Mechanical Design	3
MEAS 653	Advanced Engineering Instrumentation	3
MEAS 674	Mechanics of Viscous Flow	3
MEAS 685	Conduction Heat Transfer	3
or		
MEAS 686	Convection Heat Transfer	3
or		
MEAS 688	Radiation Heat Transfer	3

MASTER OF SCIENCE DEGREE

This graduate program is designed to provide the competent student in engineering or other selected fields an opportunity to specialize in a particular subject area within engineering. Normally this objective may be attained through the satisfactory completion of graduate-level course work and research endeavor.

TYPICAL PROGRAM OF STUDY

Academic Area	Credits
Departmental core or subdiscipline-specialty courses	24 or 30
Additional advanced mathematics (beyond MATH 324), computer systems, natural sciences, engineering sciences, or appropriate supportive areas	12
Thesis or Research Report	9 or 3
TOTAL M.S. PROGRAM	45

MASTER OF SCIENCE IN ENVIRONMENTAL SYSTEMS MANAGEMENT DEGREE

The College of Engineering offers graduate work leading to the Master of Science in Environmental Systems Management. The program is designed to provide for advanced professional and specialized education in selected areas of engineering and science related to the management and control of our natural environment.

This program provides for the preparation of engineering specialists for service in environmental related occupations by allowing concentrated study in a limited number of subdisciplines. The program is open to those who have attained the bachelor's degree in engineering or science disciplines closely related to the environmental sciences and environmental or systems engineering.

TYPICAL PROGRAM OF STUDY

The following courses may be used in the program. A typical degree program will consist of a unified group of core courses plus optional/elective courses and a research report.

CORE PROGRAM

	SUBJECTS	Q.H.
IEMS 431	Engineering Application of Computer Methods	3
CEES 501, 502	Environmental Engineering Chemistry	3, 3
IEMS 532	Management Information Systems I	4
CEES 611, 612	Environmental Engineering	4, 4
CEES 614	Sanitary Systems Design	3
CEES 615	Atmospheric Pollution Control	3
IEMS 602	Engineering Economic Analysis	3
IEMS 678	Public Operating Systems Analysis	3
XXX 698	Research Report	3
		<hr/> 36

OPTIONAL AREAS

Group 1 (3 of 4) Typical

	SUBJECTS	Q.H.
CEES 461	Transportation Engineering	3
CEES 471	Urban Planning	3
CEES 618	Solid Waste Management	3
IEMS 679	Public Systems Planning and Resource Allocation	3

Group II (3 or 4) Instrumentation

	SUBJECTS	Q.H.
EECS 531	Environmental Control Systems	3
EECS 535	Electric Power Generation and Distribution	3
EECS 625	Computer Simulation of Environmental Systems	3
EECS 645	Remote Sensing Optical Systems	3

Group III (3 of 4) Atmospheric

	SUBJECTS	Q.H.
MEAS 523	Acoustics	3
MEAS 538	Environmental Thermodynamics	3
MEAS 653	Experiment Measurements	3
MEAS 673	Transport Processes	3

TOTAL MSEM PROGRAM REQUIREMENTS — 45 CREDITS



COLLEGE OF HUMANITIES AND FINE ARTS

ART

ENGLISH

FOREIGN LANGUAGES

FRENCH

GERMAN

ITALIAN

RUSSIAN

SPANISH

HISTORY

HUMANITIES

MUSIC

PHILOSOPHY

PRE-LAW

THEATRE



COLLEGE OF HUMANITIES AND FINE ARTS

Dean: *C.N. Micarelli*
Assistant Dean: *Harry W. Smith*

The College of Humanities and Fine Arts endeavors to fulfill with the other five colleges of the University the general aims of Florida Technological University. This College has the responsibility of preparing specialists in the principal disciplines of the humanities and the fine arts. The following major study programs are presently offered: art, English, foreign languages (French, Spanish), history, humanities, music, philosophy and theatre. Any one of these majors may be combined with a core of Business Administration courses designed to prepare a student for administrative work within his major. This Humanities and Fine Arts-Business Administration program is described below. Besides these majors, courses are offered in film, German, Italian, religion and Russian.

In addition to preparing specialists in the various disciplines of the College, the College of Humanities and Fine Arts cooperates with the other five colleges of the University in the Environmental Studies Program and in offering electives suitable to all students.

A student enrolled in the College of Humanities and Fine Arts must fulfill all of the University requirements and the requirements set by the department of his major.

To be certified for graduation, a student must achieve a "C" (2.0 grade point average) in courses of his major field.

If a student does not demonstrate acceptable skills in written or spoken English, he may be referred by an instructor to the Dean. Additional course work or an individual program of study may be assigned and must be satisfactorily completed before graduation.

HUMANITIES AND FINE ARTS — ADMINISTRATION PROGRAM

The College of Humanities and Fine Arts in conjunction with the College of Business Administration offers a program which combines a major in one of the areas of the College of Humanities and Fine Arts with a number of selected courses in the College of Business Administration. This combination of concentrations will prepare the student to assume an administrative position in one of the fields of the Humanities and Fine Arts and will also afford the opportunity of going on for a Master's Degree in Business. The requirements for the college major are the same as those which must be fulfilled by a student who does not choose this plan of study.

A PROGRAM TO COMBINE A MAJOR IN THE COLLEGE OF HUMANITIES AND FINE ARTS WITH ADMINISTRATION

Environmental Studies

Basic (54)

Advanced (15)

(69)

Major Area Credits

Art (46)	Art (46-60)
English (48)	Music (96)
Foreign Language (45)	Philosophy (48)
History (48)	Theatre (58)

Administration Area Credits

(34-37)

ECON 202, 203 (8)
ACCY 300*, or ACCY 211, 212* (5-6)

A minimum of five of the following must be taken:

BADM 271 (3)	MKTG 301 (5)*
FIN 301 (5)*	STAT 201 or 301 (4)*
MGMT 301 (3)*	MGMT 311 (3)*

Recommended Courses Administration Program

COMP 303*	ENG 301 (3)*
ENGR 380*	

*Some of these courses may be used to satisfy the Environmental Studies program requirements.

Special Training ¹	(12)
Electives	(0-41)
TOTAL QUARTER HOURS REQUIRED	180

MAJOR IN HUMANITIES AND FINE ARTS

Contact Person: Dr. Harry Smith, Bldg. F.A. 509 B, Phone 275-2600

The major in Humanities and Fine Arts offers the student a broad exposure to courses in the College without the need to specialize in one department. It is a flexible program whose purpose is a liberal education and a general background in the Humanities and Fine Arts. The course requirements for the College Major are 30 hours in one department and 36 hours in two other departments with not less than 12 in any one. A typical program is as follows:

Basic Program (basic ESP, electives, or AA Degree)	90
Main area	30
Secondary area	24
Secondary area	12
Upper Division ESP	15
Electives	9
	<hr/> 180

¹The purpose of this category of credits is to tailor the program to the particular needs of the students. If a position is found in which the student can receive meaningful on-the-job experience, academic credit may be granted. Alternatives might be a directed individual study or further study in business. The special training might be a combination of these or other further alternatives decided by the student and the advisor.

MAJOR IN ART

Chairman: Lotz, Bldg. FA 525 B, Phone 275-2676

Faculty: Chavda, Eversole, Eyfells, Gaudnek, Ortmyer, Wellman

The curriculum in art provides thorough grounding in visual expression and an opportunity for specialized professional preparation in art history and in the studio areas of drawing, painting, printmaking, photography, graphic design, film, sculpture and ceramics.

The department of Art offers programs leading toward both the Bachelor of Arts (B.A.) degree and the Bachelor of Fine Arts (B.F.A.) degree.

The student's program should be established in consultation with an advisor from the area of concentration.

BACHELOR OF ART IN ARTS PROGRAM

ART HISTORY CONCENTRATION

For a major in art with art history concentration a minimum of 46 quarter hours in art courses is required. These courses should include 30 quarter hours of art history courses (to include ART 221, 222, and 223), 6 quarter hours in design fundamental courses, 4 quarter hours in ART 231, or PHI 341, and 6 quarter hours in any additional studio courses. In the senior year a satisfactory grade in comprehensive art history examination and a reading knowledge of one foreign language are required. The table below illustrates the requirements for a major in art with an art history concentration:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	46
Art (46)	
Electives	65
Primarily to be selected from upper-level courses outside the Department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

ART CURRICULUM

The following is a sample program and not necessarily a rigid sequence required of a B.A. art major concentrating in art history:

ART HISTORY CONCENTRATION

FIRST YEAR	F	W	S
Communications (ENG 101, SPE 101, and any literature, speech, or writing course)	4	3	3
General Electives		3	3
Foreign Language (101, 102, 103)	3	3	3
Art History (ART 221, 222, 223)	3	3	3
Scientific Environment	4	4	4
TOTAL	14	16	16

SECOND YEAR			
Visual Arts Overview (ART 231, or PHI 341)	F	W	S
	4		
Design Fundamentals (ART 201, 202, 203, or 204)	3	3	
Art Studio Electives			6
Art History Electives	3	3	3
Cultural and Historical Foundations		4	4
Social Sciences	4	4	
General Electives	3	3	3
TOTAL	17	17	16
THIRD YEAR			
	F	W	S
Mathematical Sciences	4	4	
Business (Advanced Program)		3	
Engineering (Advanced Program)			3
Art History Electives	3	3	3
General Electives	9	6	9
TOTAL	16	16	15
FOURTH YEAR			
	F	W	S
Education (Advanced Program)	3		
General Electives (Advanced Program)		3	3
Art History Electives	3		
General Electives	6	10	9
TOTAL	12	13	12
TOTAL QTR. HOURS REQUIRED			180

ART STUDIO CONCENTRATION

A B.A. major in art with studio concentration requires a minimum of 60 quarter hours in art courses or approved cognates, of which 15 must be taken in an area of specialization and 12 in art history.

During the first two years students should complete the following 28 quarter hours in art courses:

ART 201, 202, 203, 204	Q.H.
Design Fundamentals I, II, III, IV (3, 3, 3, 3)	9
(Select any three)	
ART 211, 212 Drawing Fundamentals I, II (3, 3)	6
ART 221, 222, 223	
History of Art I, II, III (3, 3, 3)	9
ART 231 Visual Arts Overview (4) or	4
ART 431 Developing Visual Creativity (4) or	
PHI 341 Aesthetics (4)	
Total	28

The table below illustrates the requirements for a major in art with a studio concentration:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	

Major Area Credits	60
Art (48)	
Allied Courses (12)	
Electives	51
Primarily to be selected from upper-level courses outside the Department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

For the B.A. Degree a selective portfolio of work, representing the student's accomplishment in the major studio concentration and acceptable to the studio faculty, will be submitted during the final senior quarter.

The university reserves the right to hold for exhibition purposes work done in classes.

The following is a sample program and not necessarily a rigid sequence required of all B.A. art majors concentrating in studio areas:

STUDIO CONCENTRATION

FIRST YEAR	F	W	S
Communications (ENG 101, SPE 101 and any literature, speech or writing course)	4	3	3
Social Sciences	3	3	4
Visual Arts Overview (ART 231), or Developing Visual Creativity (ART 431) or Aesthetics (PHI 341)	4		
Design Fundamentals (ART 201, 202, and 203 or 204)	3	3	3
General Electives		3	3
Drawing Fundamentals (ART 211, 212)		3	3
TOTAL	14	15	16

SECOND YEAR	F	W	S
Cultural and Historical Foundations	4	4	4
Social Sciences		3	
Art History I, II, III, (ART 221, 222, 223)	3	3	3
Scientific Environment	4	4	4
Studio Art	3	3	3
TOTAL	14	17	14

THIRD YEAR	F	W	S
Studio Art Electives	3	3	3
Mathematical Sciences	4	4	
Business (Advanced Program)			3
Engineering (Advanced Program)		3	
Art History (Advanced Program)	3		
General Electives	6	6	9
TOTAL	16	16	15

FOURTH YEAR

Education (Advanced Program)
General Electives (Advanced Program)
Art Studio Electives
General Electives

	F	W	S
Education (Advanced Program)	3		
General Electives (Advanced Program)		3	3
Art Studio Electives	3	3	6
General Electives	9	9	4
TOTAL	15	15	13

TOTAL QTR. HOURS REQUIRED

180

ART STUDIO CONCENTRATION WITH FILM EMPHASIS

Required Courses for Emphasis in Film:

Q.H.

ART 201, 202	Design Fundamentals I, II	6
ART 211, 212	Drawing Fundamentals I, II	6
ART 221, 222, 223	History of Art I, II, III	9
ART 231, 431, or PHI 341	Visual Arts Overview or Developing Visual Creativity or Aesthetics	4
ART 324	History of Photography	3
ART 341, 441	Photography & Advanced Photography	6
ART 204	Film Design	3
ART 342, 442	Cinematography and Advanced Cinematography	8
THA 310	History of Motion Picture	4
THA 424	Principles of Motion Picture	4
RTV 345	Film for Television	4
THA 434	Modern Motion Picture Techniques	4
COM 100	Basic Communications	4
TOTAL		65



The table below illustrates the requirements for a major in art with film emphasis in studio concentration:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	65
Art (45)	
Allied Courses (20)	
Electives	46
Primarily to be selected from upper-level courses outside the department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

The university reserves the right to hold for exhibition purposes work done in classes.

The following is a sample program and not necessarily a rigid sequence required of all B.A. art majors with a studio concentration in Film.

STUDIO CONCENTRATION WITH FILM EMPHASIS

FIRST YEAR	F	W	S
Communications (ENG 101, SPE 101, and any literature, speech, or writing course)	4	3	3
Social Sciences	3	3	4
ART 231, 431, or PHI 341 (Visual Arts Overview or Developing Visual Creativity or Aesthetics)	4		
Design Fundamentals (ART 201, 202, and 204)	3	3	3
General Electives		3	3
Drawing Fundamentals (ART 211, 212)		3	3
TOTAL	14	15	16

SECOND YEAR	F	W	S
Cultural and Historical Foundations	4	4	4
Social Sciences		3	
History of Art I, II, III, (Art 221, 222, and 223)	3	3	3
Scientific Environment	4	4	4
Film Courses (ART 341, THA 310)	3		4
Basic Communications (COM 100)		4	
TOTAL	14	18	15

THIRD YEAR	F	W	S
Film Courses (ART 441, 342, and THA 424)	3	4	4
Mathematical Sciences	4	4	
Business (Advanced Program)			3
Engineering (Advanced Program)		3	
History of Photography (ART 324)	3		
General Electives	6	6	8
TOTAL	16	17	15

FOURTH YEAR	F	W	S
Education (Advanced Program)	3		
General Electives (Advanced Program)		3	3
Film Courses (ART 442, RTV 345, THA 434)	4	4	4
General Electives	9	6	4
TOTAL	16	13	11
TOTAL QTR. HOURS REQUIRED			180

BACHELOR OF FINE ARTS IN ART

The B.F.A. degree is recommended for those students who can successfully petition for admission to the ART 484 program and who intend to pursue work in the Arts at the graduate level. At the present time, B.F.A. degree programs are available in the following concentrations: drawing, painting, photography, graphic design, and sculpture.

Bachelor of Fine Arts Program

A B.F.A. degree in these concentrations requires a minimum of 90 quarter hours in art courses or approved cognates, of which 23-24 quarter hours must be taken in Art History and Theory courses (including ART 221, 222, 223); 12 quarter hours in Design Fundamentals courses; 9 quarter hours in Drawing courses (including ART 211 & 212); no less than 21 quarter hours in courses from the area of concentration; 4 quarter hours in PHI 341 (Aesthetics); and a grade of C or better in ART 484 (Senior Studio and Exhibition).

The procedure for admission to ART 484 (Senior Studio and Exhibition) requires formal application and portfolio submission by the student to the department chairman and the studio faculty, no earlier than the first quarter of the student's senior year (upon completion of 135 quarter hours). After successfully petitioning for admission to ART 484, the student must complete no less than 45 quarter hours at FTU of which at least 20 quarter hours must be in Art courses.

The table below illustrates the requirements for a B.F.A. major in Art:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	90
Art (86)	
Allied Courses (4)	
Electives	21
Primarily to be selected from upper-level courses outside the Department with the approval of the student's advisor.	
TOTAL QUARTER HOURS REQUIRED	180

The university reserves the right to hold for exhibition purposes work done in classes.

The following is a sample program and not necessarily a rigid sequence required of all B.F.A. Art Majors:

FIRST YEAR	F	W	S
Communications (ENG 101, SPE 101, and any literature, speech or writing course)	4	3	3
Social Sciences	3	3	4
Aesthetics (PHI 341)		4	
Design Fundamentals (ART 201, 202, 203)	3	3	3
General Electives			3
Drawing Courses (ART 211, 212, 311)	3	3	3
TOTAL	13	16	16

SECOND YEAR	F	W	S
Cultural and Historical Foundations	4	4	4
Social Sciences		3	
Art History, I, II, III (ART 221, 222, 223)	3	3	3
Scientific Environment	4	4	4
Design Fundamentals (ART 204)	3		
Studio Art		3	3
TOTAL	14	17	14

THIRD YEAR	F	W	S
Studio Art Electives	6	3	6
Mathematical Sciences	4	4	
Business (Advanced Program)			3
Engineering (Advanced Program)		3	
Art History	3	3	3
General Electives	2	2	3
TOTAL	15	15	15

FOURTH YEAR	F	W	S
Education (Advanced Program)	3		
General Electives (Advanced Program)		3	3
Art Studio	3	3	3
ART 484 (Senior Studio & Exhibition)			3
General Electives	8	7	3
Art History	3		3
TOTAL	17	13	15

MAJOR IN ENGLISH

Chairman: Grove, Bldg. FA 432-C, Phone 275-2212

Faculty: Adicks, Barnes, Browne, Combs (Emeritus), Donnelly, Fetscher, McCown, Mortimer (on leave), Omans, Posner, Price, Schiffhorst, Umphrey, Wyatt.

The FTU English Department is responsible for the effective teaching of literature in English, including World Literature, as well as expository and creative writing. It serves not only the special needs of those students concentrating in literature or in writing but also the broad needs of the University by offering courses in expository writing and literature to students from other departments.

REQUIREMENTS

The table below outlines the requirements for a major in English:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54) Includes 8 hours of modern language	
Advanced (15)	
Major Area Credits	60
English (48)	
Modern Language (12)	
Electives	51
To be selected primarily from upper level courses outside the Department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

Students may concentrate in literature, in writing or may combine these.

LITERATURE CONCENTRATION

The major in English with a concentration in *literature* consists of a minimum of 48 quarter hours above the Freshman level, including the following required courses: ENG 202, 211, 212, 213, 311, 312, 313, 314; 6 hours of Chaucer, Shakespeare or Milton: 430, 431, 432, 433, 434; plus 9 hours of any of the 400-level sequence courses and 12 hours of upper-division electives in English.

SAMPLE PROGRAM

This is a sample program and not a sequence required of all majors.

FIRST YEAR	F	W	S
ENG 101, 103, 202	4	3	3
SPE 101, HUM 201, MATH 100	3	4	4
FRE 101, 102, 103	3	3	3
HIST 201, BIOL 103, 105	4	4	4
TOTAL	14	14	14

SECOND YEAR	F	W	S
ENG 211, 212, 213	3	3	3
ENG 311, 312, 313	3	3	3
GEOL 100-110, PSY 201, 202	4	3	3
FRE 201, 202, 203	4	4	4
ESPE 304, HIST 201, 202	3	4	4
TOTAL	17	17	17

THIRD YEAR	F	W	S
ENG 430, 432, 433	3	3	3
ENG 314, 318, 371	3	4	3
HIST 461, 462, 463	4	4	4
BADM 301, ENGR 480,	3	3	
ENG 302, 305, 410	3	3	3
TOTAL	16	17	13

FOURTH YEAR	F	W	S
ENG 427, 428, 429	3	3	3
ENG 400, 472, 434	3	3	3
ENG 445, 320, 520	3	4	4
RTV 344, 444, HIST 466	4	4	4
TOTAL	13	14	13
TOTAL QTR. HOURS REQUIRED			180

The major in English with a concentration in *writing* consists of a minimum of 48 quarter hours, above the Freshman level, including the following: 18 hours selected from ENG 202, 211, 212, 213, 311, 312, 313, 314, or 321; ENG 371 and either 471 or 472; 3 hours of upper-division literature selected in consultation with student's advisor; and 21 hours selected from the following writing courses: ENG 208, 209, 210, 302, 303, 304, 305, 306, 307, 308, 309, 400, 401, 402, 403, 404, 494. (Note: students may substitute up to 9 hours of writing courses in Communications for an equivalent number of hours of English writing courses). All majors in writing must demonstrate acceptable skills in personal typing by the end of the sophomore year.

SAMPLE PROGRAM

This is a sample program and not a sequence required of all majors.

FIRST YEAR	F	W	S
ENG 101, 103, 202	4	3	3
ENG 208, 307		3	3
SPE 101, MATH 100, STAT 201	3	4	4
BIOL 103, 105, GEOL 100-110	4	4	4
PSY 201	4		
TOTAL	15	14	14

SECOND YEAR	F	W	S
ENG 211, 212, 213	3	3	3
FRE 101, 102, 103	4	4	4
PSY 202, HUM 201, ENG 371	4	4	3
ENG 302, 303, 304	3	3	3
ESPE 304, 305, PCL 201	3	3	4
TOTAL	17	17	17

THIRD YEAR	F	W	S
ENG 321, 410, 313	3	3	3
FRE 201, 202, 203	4	4	4
BADM 301, ENGR 480	3	3	
JRN 421, ENG 305	4		3
HIST 201, 202, 203	4	4	4
TOTAL	18	14	14

FOURTH YEAR	F	W	S
ENG 472, 520, 460	3	4	3
ENG 401, 402, 403	3	3	3
HIST 311, 312, 313	4	4	4
ENG 431, 432, 433	3	3	3
TOTAL	13	14	13
TOTAL QTR. HOURS REQUIRED			180

THE LANGUAGE REQUIREMENT

Students majoring in English must show proficiency in one modern foreign language by passing a proficiency examination offered by that department, by presenting four years of high school credit in one language, or by one of the following:

- A. This plan involves 24 hours of a modern foreign language.
- B. This plan allows the student to present the first year of a modern foreign language, consisting of 12 quarter hours; he would then take 12 additional quarter hours in English courses beyond the 48-hour requirement, either in literature or writing, at the upper-division level.
- C. This plan allows the student to complete two full years of a modern foreign language and then proceed into upper-division literature courses in that language. Up to nine quarter hours of foreign literature could then be substituted for an equivalent number of upper-division English credits.

TEACHER CERTIFICATION

English majors who wish to be certified must follow the alternate certification program as established by the College of Education.

PHASE I	EDTA 307 EDTA 206 or PSY 301	5 qtr. hrs. 3-4 qtr. hrs.
TOTAL		8-9 qtr. hrs.
PHASE II	EDSE 305 or EDSE 303 EDPL 330 EDSE 340 EDVA 402	 3 qtr. hrs. 3 qtr. hrs. 4 qtr. hrs. 3 qtr. hrs.
TOTAL		13 qtr. hrs.
PHASE III	EDSE 404 EDPL 408 EDPL 430	3 qtr. hrs. 3 qtr. hrs. 9 qtr. hrs.
TOTAL		15 qtr. hrs.
TOTAL QTR. HRS. REQUIRED		36 or 37

COURSE SEQUENCE

1. The Foundations of Education courses (EDTA 307, EDTA 206 or PSY 301) must be completed before enrolling in Phase II courses.
2. EDSE 404, EDPL 408 and EDPL 430 are the courses for Student Teaching.

MASTER OF ARTS IN ENGLISH

The Department of English offers graduate work leading to the Master of Arts degree, consisting of courses and seminars in literature, linguistics, and the teaching of literature and composition. The Master of Arts program provides advanced study for persons holding a bachelor's degree in English or its equivalent, as well as enables teachers holding a Rank III Florida certificate to acquire Rank II certificate while enhancing their teaching ability and developing the knowledge and skills necessary for teaching English in college.

Admission Requirements

To be admitted to the Master of Arts program in the Department of English the student must meet the following requirements in addition to minimal university requirements:

1. Hold an undergraduate major in English, or its equivalent, with an average of B in all English courses. (Applicants without a major in English may remove any deficiencies without graduate credit).
2. Be admitted by the Graduate Committee of the English Department.

A student admitted to Post-Baccalaureate status may enroll in graduate courses in English and may upon approval of the English Department Graduate committee, transfer into the degree program up to eighteen hours earned while a Post-Baccalaureate student.

Degree Requirements

A student must maintain a 3.0 grade point average in a program of study approved by the Graduate Committee of the English Department. The Master of Arts degree in English requires a minimum of 45 quarter hours of graduate credit, at least 24 hours of which must be at the 600 level. Students will be required to complete the following core of four-hour graduate courses:

ENG 610	Literary Genres
ENG 620	World Literature
ENG 630	Movements in Literature
ENG 640	Problems of Linguistics
ENG 650	Major Authors
ENG 660	Media and Popular Literature

Examinations

In addition to examinations and research papers required by individual professors, each candidate for the Master of Arts must pass a comprehensive written examination during the term in which his degree is to be awarded. The examination, which will test the candidate's knowledge of principal works in British, American, and other literatures, and his understanding of major trends in the study of language, will be evaluated by several members of the graduate faculty. The Graduate Committee will supervise preparation of the examination and certify the results.

Language Requirement

The candidate for the Master of Arts degree must demonstrate a reading knowledge of a foreign language.

MAJOR IN FOREIGN LANGUAGES

Chairman: *Cervone*, Bldg. FA 436-B, Phone 275-2641

Faculty: *Bergstrom, DiPierro, Dovhey, Micarelli, Payas, Taylor*

Language studies in the College of Humanities and Fine Arts provide instruction in French, German, Italian, Russian, and Spanish, with majors in French and Spanish. These programs are designed to meet the needs of students who desire competency in a language and expanded understanding of a foreign culture and literature. Students enrolled in 100, 200, and certain 300 level courses are required to attend the language laboratory for at least one hour per week.

MAJOR REQUIREMENTS

A student wishing to major in a foreign language must meet all the requirements for graduation as set forth by the University, the College of Humanities and Fine Arts, and by the Department of Foreign Languages. The foreign language major must complete 44 quarter hours in the chosen language beyond the 100 and 200 level. Among these 44 quarter hours the student must take courses numbered 301, 303, 311, 312, and 313. (Course letter prefix is determined by the language.)

A native speaker must substitute a literature course for the conversation course (301). Moreover, in cases where the native speaker has received advanced education abroad, he will not be permitted to take the composition course (303) for the fulfillment of his major requirements but must substitute another language or literature course chosen with his advisor.

COMBINED MAJORS:

For a major in two foreign languages, a student must take the courses numbered 301, 303, 311, 312, 313, in both languages plus an additional 18 credits in his first language and an additional 9 credits in his second language.

A native speaker must substitute a literature course for the advanced conversation (301) course. Moreover, in cases where the native speaker has received advanced education abroad he will not be permitted to take the advanced composition course (303) for the fulfillment of his major requirements but must substitute another language or literature course chosen with his advisor.

PLACEMENT OF STUDENTS IN LANGUAGE CLASSES

Normal placement is as follows: Four years of one high school language would place the student in the first quarter of the third year; three years, in the second quarter of the second year; two years, in the first quarter of the second year; one year, in the second quarter of the first year.

If a student feels that his high school preparation was inadequate, he may be allowed to drop back one quarter with the permission of a member of the Foreign Language Department. If a student has studied a language in high school for two years or less, five or more years prior to the time of enrollment in a language course, he may be allowed to disregard his high school language training and begin anew.

A native speaker must substitute a literature course for the conversation course (301). Moreover, in cases where the native speaker has received advanced education abroad, he will not be permitted to take the advanced composition course (303) for the fulfillment of his major requirements but must substitute another language course chosen with his advisor.

The table below illustrates the requirements for a major in foreign languages:

AREAS	Q.H.
SINGLE MAJOR	
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	45
Electives	66
Primarily to be selected from upper level courses outside the Department with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180
COMBINED MAJORS	
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	67
First Language (38)	
Second Language (29)	
Electives	44
Primarily to be selected from the upper level courses outside the Department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

Whether the student chooses to major in one or two foreign languages, or plans a foreign language-education major, he and his advisor should organize his elective courses in the areas of literature (foreign or otherwise) and related disciplines (such as art, history, humanities, music, philosophy).

FOREIGN LANGUAGE CURRICULUM

The following is a sample program and not necessarily a rigid sequence required of all language majors.

FIRST YEAR	F	W	S
Foreign Language	4	4	4
Basic Environmental Studies:			
Communications	4	3	3
Cultural & Hist. Foundations		4	4
Mathematical Sciences	4	4	
Social Sciences	3		4
TOTAL	15	15	15

SECOND YEAR	F	W	S
Foreign Language	4	4	4
Basic Environmental Studies:			
Scientific Environment	4	4	4
Electives	7	7	7
TOTAL	15	15	15

THIRD YEAR	F	W	S
Foreign Languages	8	8	8
Advanced Environmental Studies	3	3	3
Electives	4	4	4
TOTAL	15	15	15

FOURTH YEAR	F	W	S
Foreign Language	8	9	8
Electives	6	6	8
TOTAL	14	15	16
TOTAL QTR. HOURS REQUIRED			180

MAJOR IN HISTORY

Chairman: *Shofner, Bldg. FA 551-B, Phone 275-2224*

Faculty: *Crepeau, Evans, Fetscher, Greene, Greenhaw, Kallina, Pauley, Wehr.*

Students majoring in history must complete at least 48 hours in history courses. At least eight quarter hours must be selected from each of three of the following fields: United States, European, Latin American, or Asian history.

History majors are encouraged but not required to develop a proficiency in a foreign language.

The table below illustrates the requirements for a major in History:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	66
History (47)	
*Foreign Language or alternative (at least 18)	
Electives	45
To be selected with approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

*Acceptable alternatives include concentration in a minor field, the pre-law program shown below, or teacher certification.

MAJOR IN HISTORY (PRE-LAW)

The (Pre-Law) History major is designed for students interested in preparing for admission to law school. In keeping with the expressed preference of prominent law schools for students with broad liberal arts backgrounds, the pre-law history student is required to complete courses in the humanistic disciplines in addition to those required for the History major. The table below illustrates the requirements for a Pre-Law History major:

AREAS

Q.H.

Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	48
Same as History Major	
Additional courses are:	
U.S. Constitutional History (4)	
British Constitutional History (4)	
Logic (PHI 205) (4)	
Advanced Composition (ENG 307 or 400) (3)	
American or British Literature (adv) (3)	
European or World Literature (adv) (3)	
Art History (ART 221, 222, or 223) (3)	
Enjoyment of Music (MUS 199) (4)	
History of Motion Picture, Theatre	
or Drama (THA 310, 331—333, 341-343) (3-4)	
Advanced Speech (SPE 360 or 362) (4)	
TOTAL	35-36
Electives	28
To be selected with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180-81

HISTORY CURRICULUM

The following is a sample program and not necessarily a rigid sequence required of all History majors.

FIRST YEAR	F	W	S
Scientific Environment	4	4	4
Communications (ENG 101, SPE 101, ENG 103)	4	3	3
History (HIST 201, 202, 203)	4	4	4
Foreign Language (101, 102, 103)	3	3	3
TOTAL	15	14	14

SECOND YEAR	F	W	S
Cultural & Historical Foundations	4		
Mathematical Sciences	4	4	
Social Sciences		6	3
History (HIST 311, 312, 313)	4	4	4
Foreign Language (201, 202, 203)	3	3	3
General Electives	3		4
TOTAL	18	17	14

THIRD YEAR	F	W	S
European History	4		4
Western Hemisphere (History)		4	4
Business (Advanced Program)	3		
Engineering (Advanced Program)		3	
General Electives	8	8	8
TOTAL	15	15	16

FOURTH YEAR	F	W	S
Education (Advanced Program)	3		
General Electives (Advanced Program)		3	3
History Electives	4	4	
General Electives	7	8	10
TOTAL	14	15	13
TOTAL QTR. HRS. REQUIRED			180

HISTORY PRE-LAW CURRICULUM

The following is a sample program and not necessarily a rigid sequence required of all History (Pre-Law) majors.

FIRST YEAR	F	W	S
Scientific Environment	4	4	4
Communications (ENG 101, 103 SPE 101)	4	3	3
History (HIST 201, 202, 203)	4	4	4
Mathematical Environment (including PHI 205)	4	4	
General Electives			4
TOTAL	16	15	15

SECOND YEAR	F	W	S
History (U.S.)	4	4	4
Western Humanities Survey (HUM 201)	4		
Social Sciences	4	4	4
Art History (ART 221, 222, or 223)		3	
Enjoyment of Music (MUS 320)			4
General Electives	3	3	3
TOTAL	15	14	15

THIRD YEAR	F	W	S
European History	4	4	
British Constitutional History	4		
Advanced Composition (ENG 307, 310 or 400)	3		
Advanced American or British Literature		3	
Advanced Speech (SPE 360 or 362)			4
Advanced European or World Lit.			3
Advanced Theatre (THA 310, 331-333 341-343)			4
Western Hemisphere History		4	4
Business (Advanced Program)	3		
Engineering (Advanced Program)		3	
TOTAL	14	14	15

FOURTH YEAR	F	W	S
Education (Advanced Program)	3		
General Electives (Advanced Program)		3	3
History Electives	4	4	
American Constitutional History	4		
General Electives	6	8	12
TOTAL	17	15	15
TOTAL QTR. HOURS REQUIRED			180

MAJOR IN HUMANITIES

Chairman: *Flick*, Bldg. FA 415, Phone 275-2273

Faculty: *Jones, Kassim, Levensohn, Riley, Riser*

Each student's program is, to a large extent, individual and should be discussed with a humanities advisor. The major is given coherence by means of the concentrations listed below, and students may wish to gain still further depth by concentrating in a particular time period, such as the classical world or the 19th century. The advisor can help select courses to gain this end. Exceptions to any part of the program must have the recommendation of the advisor and approval of the Department Chairman.

One year of a foreign language (12 quarter hours at FTU, or equivalent) is required in all concentrations. A second year is strongly recommended, particularly for those planning graduate study.

Humanities majors should make use of their electives in one of the following ways:

1. To obtain a second major
2. To complete requirements for teacher certification in Humanities in the College of Education.
3. Or to strengthen the major by taking cognate courses in the various Departments in the College of Humanities and Fine Arts.

CONCENTRATION IN IDEAS

ENG 317-318, 211, 212, 213, 311, 312, 313, 415 or FL 323-324	8
HIST 301, 302, 303, 304, 305, 306, 307	8
PHI 301, 302, 303	8
REL 300, 401	4
Elective in Literature, history, philosophy or religion (upper level)	3-4
ART 221, 222, 223, 421, 433	3-4
MUS 320	4
THA 210, 310, 331, 332, 333	3-4
HUM 401, 402, 403	12
TOTAL	53-56

CONCENTRATION IN THE ARTS

ENG 317-318 or FL 323-324	4
HIST 301, 302, 303, 304, 305, 306, 307	4
PHI 301, 302, 303	4
REL 300, 401	4
Choose 9 hrs. in three areas and 6 hrs. in one	33
ART 201-204, 211, 221, 222, 223	6 - 9
ENG 302, 303, 304 (creative writing)	6 - 9
MUS 101-103, 104-108, 305	6 - 9
THA 180, 210, 310, 331, 332, 333	6 - 9
HUM 401, 402, 403	12
TOTAL	61

CONCENTRATION IN WORLD CULTURES

Choose 12 hrs. in one area and 8 hrs. in two		28
ENG 317-318, FL 323-324, FRE 311-313, SPA 311-313, 316-318	8 - 12	
HIST 435, 439, 470, 471, 472	8 - 12	
REL 315, 317, 318, 319	8 - 12	
ART 321, 322		6
MUS 320		4
THA 342, 343		4
HUM 401, 402, 403		12
	TOTAL	54

SAMPLE CURRICULUM FOR HUMANITIES MAJOR

The following is not a rigid sequence of all majors in humanities but is suggested as a means of helping students plan their programs.

FIRST YEAR	F	W	S
Communications (ENG 101, SPE 101, ENG 103)	4	3	3
Foreign Language (101, 102, 103)	4	4	4
Social Sciences	3	3	3
Mathematical Sciences (mathematics, logic)	4	4	
General Electives			4
TOTAL	15	14	14

SECOND YEAR	F	W	S
Cultural & Historical Found. (History, PHI 221, HUM 201)	4	4	4
Scientific Environment	4	4	4
Courses in Major (lower level; choices depend on concentration)	4	4	4
General Electives or Foreign Language	4	4	4
TOTAL	16	16	16

THIRD YEAR	F	W	S
Advanced ESP (business, engineering, education)	3	3	3
Advanced ESP (upper level electives outside college)	3	3	
Courses in Major (upper level; see concentration)	8	9	12
TOTAL	14	15	15

FOURTH YEAR	F	W	S
Humanities Capstone Courses (HUM 401, 402, 403)	4	4	4
Courses in Major (as needed) or General Electives	11	11	11
TOTAL	15	15	15

MAJOR IN MUSIC

Acting Chairman:	<i>Wolf, Bldg. FA 105 A, Phone 275-2867</i>
Faculty:	<i>Brodie, Eubank, Harrison, Hotaling, Palmer, Stenberg, Szabo, Whisler, Wood, Wrancher</i>
Part-time Faculty:	<i>Boyd, Butsch, Eshenaur, Hasse, Kupfer, Marks, Micarelli, Schoenbohm</i>

The degree of Bachelor of Arts with a major in music is designed for the study of music in a liberal arts curriculum. To insure synthesis of the many musical elements into a comprehensive whole, the student is assigned to progressively organized sequences in *Musicianship* and *Principal Performance*. The student's initial placement in these fundamental courses is made by the music faculty following a musicianship test and performance audition to be scheduled by the student before his first registration. Subsequent progress is determined by achievement tests and performance juries administered at specific points in his musical development. In general, the student's rate of progress in these basic sequences depends upon his own initiative.

The *Musicianship* courses are designed to enhance the student's writing, analysis, and performance skills. This integrated systematic study of music aids in the development of the student's skills in sight singing, keyboard harmony, score reading, conducting, aural analysis, visual analysis, part writing, counterpoint, instrumentation, and composition. Emphasis is placed on writing and performance of music. The Musicianship courses meet every day for one hour plus one additional hour each week in Music Laboratory.

The Performance courses include experience in solo and ensemble (major performing organization and chamber music ensembles). Faculty approved junior and senior recitals are included in the requirements for these courses.

The Piano Proficiency Examination must be completed satisfactorily before the student can be admitted to MUS 404 in his major performing medium. Enrollment in *Music Forum* is required each quarter for the students enrolled in *Principal Performance*.

The table below illustrates the requirements for a major in Music:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	96
Music Forum (0) twelve quarters	
Musicianship (36)	
Principal Performance (48)	
may not include more than 12 quarter hours in each of MUS 204, 304, or 404. At the advisor's discretion, this may include up to 8 hours in Secondary Performance in a musical Medium (or media) other than the student's major.	
Directed Experience (12)	
Electives	15
Primarily to be selected from upper level courses outside the Department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

MUSIC CURRICULUM

The following is a sample program and not necessarily a rigid sequence required of all Music majors.

FIRST YEAR	F	W	S
Music Forum (MUS 100)	0	0	0
Musicianship (MUS 201, 202, 203)	4	4	4
Performance (MUS 204)	4	4	4
Communications (ENG 101, SPE 101, ENG 103)	4	3	3
Scientific Environment		4	4
Cultural & Historical Foundations	4		
TOTAL	16	15	15

SECOND YEAR	F	W	S
Music Forum (MUS 100)	0	0	0
Musicianship (MUS 301, 302, 303)	4	4	4
Performance (MUS 304)	4	4	4
Humanities (HUM 201)	4		
Social Sciences		3	3
Scientific Environment			4
Mathematical Sciences	4	4	
TOTAL	16	15	15

THIRD YEAR	F	W	S
Music Forum (MUS 100)	0	0	0
Musicianship (MUS 401, 402, 403)	4	4	4
Performance (MUS 404)	4	4	4
Social Sciences		3	3
Business	3		
Cultural & Historical Foundations			4
Electives	4	3	
TOTAL	15	14	15

FOURTH YEAR	F	W	S
Music Forum (MUS 100)	0	0	0
Directed Experience (MUS 474)	4	4	4
Performance (MUS 484)	4	4	4
Engineering	3		
Education		3	
Electives	4	4	6
TOTAL	15	15	14
TOTAL QTR. HOURS REQUIRED			180

MAJOR IN PHILOSOPHY

Chairman: *Flick*, Bldg. FA 415, Phone 275-2273

Faculty: *Jones, Kassim, Levensohn, Riser*

A major in philosophy requires 48 quarter hours, distributed as indicated below. Any exception to the stated requirements must have the recommendation of the student's advisor in the Department of Humanities, Philosophy and Religion and the approval of the Chairman of this department. Successful completion of at least one other course in philosophy is prerequisite to enrollment in any 400 level philosophy course. Proficiency in a foreign language is encouraged, and strongly recommended for those planning graduate study.

PHI 105 or PHI 205 (Logic)	4
PHI 221 (Introduction to Philosophy)	4
PHI 301 (Ancient Philosophy)	4
PHI 302 or 303 (Modern Philosophy)	4
PHI 312 (Existentialism)	4
PHI 314 (Problems in Contemporary Philosophy)	4
PHI 331 (Ethics)	4
PHI 494 (Independent Study)	4
Electives in Philosophy or Religion	16
TOTAL	48

MAJOR IN PHILOSOPHY WITH CONCENTRATION IN RELIGION

PHI 105 Non-Formal Logic	
PHI 221 Introduction to Philosophy	
PHI 331 Ethics	
PHI 301 Ancient Philosophy	
PHI 405 Philosophy of Religion	20
REL 300 The Hebrew and Christian Heritage	
REL 315 The Religious Heritage of China and Japan	
REL 317 The Religious Heritage of India	
REL 318 The Religious Heritage of Islam	
REL 319 Ancient Near Eastern Religions	16
REL 401 Comparative Religion	4
REL 321 Religion in America	
REL 441 Modern Theology	
REL 471 Mythology	
REL 473 The Religious Quest	
REL 477 Mysticism	8
TOTAL	48

SAMPLE CURRICULUM FOR MAJOR IN PHILOSOPHY

The following is not a rigid sequence required of all majors in philosophy but is suggested as a means of helping students plan their programs.

FIRST YEAR	F	W	S
Communications (ENG 101, SPE 101, ENG 103)	4	3	3
Cultural and Historical Foundations (PHI 221, History, HUM 201)	4	4	4
Mathematical Sciences (Mathematics, Logic)		4	4
PHI 105 or elective in Religion	4		
Foreign language or general electives	4	4	4
TOTAL	16	15	15

SECOND YEAR	F	W	S
Philosophy or Religion (300 level)	4	4	4
Social Sciences	4	4	4
Scientific Environment	4	4	4
General Electives	3	3	3
TOTAL	15	15	15



THIRD YEAR	F	W	S
Philosophy or Religion (upper level)	4	4	8
Advanced ESP (Business, Engineering, Education)	3	3	3
Advanced ESP (upper level electives outside H & F A)	3	3	
General electives or second major	4	4	4
TOTAL	14	14	15

FOURTH YEAR	F	W	S
Philosophy or Religion (upper level)	4	4	4
General Electives or second major	11	12	11
TOTAL	15	16	15
TOTAL QTR. HOURS REQUIRED			180

MAJOR IN THEATRE

Chairman: (*Acting*) *H. Smith*, Bldg. FA 509B, Phone 275-2600

Faculty: *Mays, Smith*

The department of Theatre offers the student an opportunity to concentrate in the area of theatre either as a preparation for graduate or professional study or as a course of study in the liberal arts.

The major in Theatre consists of four programs of study, one of which will be pursued by the student upon consultation with his advisor and after the basic program has been completed.

The four programs are:

- A. Theatre History and Criticism
- B. Technical Theatre and Design
- C. Acting and Directing
- D. Film

The student majoring in Theatre is required to choose the program he intends to pursue by the end of his sophomore year.

The Basic Program. There are three courses that are required of all students majoring in Theatre. Transfer students should be prepared to show equivalent courses, or the requirement will apply to them also. The three required course are:

THA 180 Study of Theatre and Drama	(3)
THA 210 Cinema Survey	(4)
THA 290 Theatre Practicum	(3, 3)
TOTAL	16

Upon the successful completion of these courses the student will consult with his advisor concerning the individual program in which he is most interested and for which he shows the greatest aptitude.

THE MAJOR PROGRAMS

Theatre History and Criticism. The following courses are required for the completion of the "A" program:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	57
Basic Program (Theatre) (13)	
History of the Motion Pictures (THA 310) (4)	
History of the Theatre (THA 331-333) (9)	
Development of Drama (THA 341-343) (12)	
Dramatic Theory (THA 421) (3)	
Contemporary Theatre/Drama (THA 423) (3)	
Dramatic Criticism (THA 425) (3)	
Modern Currents in the Theatre (THA 441) (4)	
American Drama (THA 486-487) (6)	
Electives	54
Primarily to be selected from upper level courses outside the department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180
<i>Technical Theatre and Design.</i> The following courses are required for the completion of the "B" program:	

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	56
Basic Program (13)	
Technical Theatre Production (THA 240) (4)	
Stage Carpentry (THA 241) (4)	
Stage Properties (THA 242) (4)	
Costumes: History and Theory (THA 350) (4)	
Costume Design and Makeup (THA 351) (4)	
Scene Design (THA 381) (4)	
Stage Lighting (THA 382) (4)	
Theatre Practicum II (THA 390) (4)	
Modern Currents in the Theatre (THA 441) (4)	
Advanced Scene Design (THA 483) (4)	
Special Topics (THA 491) (3)	
Electives	55
Primarily to be selected from upper level courses outside the department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180
<i>Acting and Directing.</i> The following courses are required for the completion of the "C" program.	

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	58

Basic Program (13)
 Technical Theatre Production (THA 240) (4)
 Stage Properties (THA 242) (4)
 Acting (THA 280) (4)
 History of the Motion Picture (THA 310) (4)
 Costumes: History and Theory (THA 350) (4)
 Costume Design and Makeup (THA 351) (4)
 Modern Stage Movement (THA 375) (4)
 Directing I (THA 380) (3)
 Scene Design I (THA 381) (4)
 High School Play Directing (THA 422) (3)
 Acting II (THA 491) (3)
 Creative Dramatics/Children's Theatre (THA 488) (3)

Electives 52
 Primarily to be selected from upper level courses outside the department, with the approval of the student's advisor.

TOTAL QTR. HOURS REQUIRED 180

Film. The following courses are required for the completion of the "D" program.

AREAS Q.H.

Environmental Studies Program 69

Basic (54)

Advanced (15)

Major Area Credits 55

Study of Theatre and Drama (THA180) (3)

Cinema Survey (THA 210) (4)

Theatre Practicum (THA 290) (4-6)

History of Motion Picture (THA 310) (4)

Principles of Motion Picture Art (THA 424) (4)

Directing I,II (THA 380, 480) (6)

or

Scene Design, Stage Lighting (THA 381, 382) (8)

Photography (ART 341) (3)

Basic Communications (COM 100) (3)

Film for TV (RTV 345) (4)

Additional courses selected in THA, ART, or RTV in consultation with advisor. Certain courses may be specified to fulfill environmental studies requirements.

Electives 56

TOTAL QTR. HOURS REQUIRED 180

THEATRE CURRICULUM

The following is a sample program and not necessarily a rigid sequence required of all Theatre majors. It is designed for the student electing the "A" program (Theatre History and Criticism) in the Theatre Major. Students in the other programs will have similar curricula, with courses in their major reflecting their particular interests.

FIRST YEAR	F	W	S
ENG 101, SPE 101	4	3	
ENG 103			3
PSY 201, 202	3	3	
BIOL 100			4
COM 100			3
PCL 201	3		
HUM 201		4	
THA 290	3	3	3
THA 180	3		
THA 230		3	
MATH 100			4
TOTAL	16	16	17

SECOND YEAR	F	W	S
PHI 205	4		
PHY 101		4	
HUM 301			4
HIST (any)			4
THA 210	4		
THA 290	3	3	3
THA 310		4	
THA 331, 332, 333	3	3	3
TOTAL	14	14	14

THIRD YEAR	F	W	S
BADM 302	3		
ENGR 481		3	
EDEL 482			3
THA 341, 342, 343	4	4	4
ENG 431, 432, 433	3	3	3
ELECTIVES	3	3	
THA 421, 423, 425	3	3	3
TOTAL	16	16	13

FOURTH YEAR	F	W	S
THA 431, 441	3	4	
THA 486, 487	4	4	
ENG 441, 442	3		3
ENG 453		3	
FL 323, 324	4		4
THA 491, 492	4	5	
THA 494			5
TOTAL	18	16	12
TOTAL QTR. HOURS REQUIRED			182

COLLEGE OF NATURAL SCIENCES

•UNDERGRADUATE PROGRAMS

BIOLOGICAL SCIENCE

BIOLOGY
BOTANY
FRESH WATER ECOLOGY
MICROBIOLOGY
ZOOLOGY

CHEMISTRY

COMPUTER SCIENCE

FORENSIC SCIENCE

MATHEMATICS

MEDICAL RECORD ADMINISTRATION

MEDICAL TECHNOLOGY

PHYSICS

PREPROFESSIONAL

PREDENTAL
PREMEDICAL
PRENURSING
PREOPTOMETRY
PREPHARMACY
PREVETERINARY

RADIOLOGIC TECHNOLOGY

RESPIRATORY THERAPY

STATISTICS

•GRADUATE PROGRAMS

BIOLOGICAL SCIENCE

COMPUTER SCIENCE

MATHEMATICAL SCIENCE



COLLEGE OF NATURAL SCIENCES

Dean: *B. Ostle*

Assistant Dean: *R.J. Laird*

It is the purpose of the College of Natural Sciences to assist all of its students to develop their individual capabilities to the fullest. The College is concerned not only with the intellectual development of its students, but also with their proper physical, emotional, social and spiritual growth. To this end, the College will provide a broad liberal education through the Environmental Studies Program as well as concentrated study in specialized fields.

Specific objectives of the College of Natural Sciences are:

- A. To see that the student obtains an education which will:
 - 1. Develop in him a sense of personal and social responsibility;
 - 2. Aid him in developing those qualities of mind and character necessary to intellectual advancement and to productive membership in society;
 - 3. Give him an awareness of the more important achievements of mankind;
 - 4. Arouse his intellectual interests;
 - 5. Give him an increased appreciation of the values expressed in morality, religion, the sciences and the fine arts;
 - 6. Bring about a progressive strengthening and refining of the powers of reasoning and judgment; and
 - 7. Stimulate him to continue to seek knowledge throughout his adult life.
- B. To provide the student, through its programs of concentrated study, with the opportunity to achieve competence in a scientific or technical profession of his choosing.
- C. To help develop the student's character and provide him with the motivation to use his knowledge wisely.

In order to achieve the above objectives, the College of Natural Sciences will:

- A. Participate in the Environmental Studies Program to provide all students in the University with the opportunity to obtain some fundamental understanding in the sciences so that they may deal with the complexities of modern life;
- B. Provide undergraduate and graduate instruction in the various subject matter fields which constitute the biological, mathematical, physical and health related sciences;
- C. Encourage and support research in all subject matter fields which are included in the College of Natural Sciences; and
- D. Provide training in preparation for later admission to a professional school of dentistry, medicine, nursing, optometry, pharmacy, or veterinary medicine.

The College of Natural Sciences will cooperate with the Colleges of Business Administration, Humanities and Fine Arts, and Social Sciences by making available to

their students general and specialized courses in the mathematical and natural sciences; with the College of Engineering by providing instruction in those basic fields that constitute the scientific framework upon which its professional programs are built; and with the College of Education in the preparation of teachers by providing extensive and intensive training in the biological, mathematical, and physical sciences.

MAJOR STUDY PROGRAMS AND GENERAL REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE

In addition to meeting all University requirements, each degree program in the College of Natural Sciences must contain:

- (1) ENG 310, Professional Report Writing II, and
- (2) courses which will introduce the student to the three major scientific disciplines within the College; i.e., physical sciences, biological and health sciences, and mathematical and computer sciences.

To satisfy the latter requirement, each student must take six courses distributed among the two scientific disciplines outside that of his major with a minimum of two courses in either discipline. (Notes: (1) Each department has identified a group of approved courses from which its majors may select in order to satisfy this College requirement. These courses will be of sufficient academic rigor to acquaint the student with both the philosophy and methodology of professionals within their disciplines. (2) With proper justification a student may be permitted to utilize courses offered outside the College of Natural Sciences to satisfy this distribution requirement by obtaining the prior approval of the Dean. Such requests must carry departmental approval before submission to the College of Natural Sciences Curriculum and Standards Committee which will then forward them, with its recommendation, to the Dean.)

All degree programs must be approved by the major department and by the Dean of the College of Natural Sciences.

At the present time, undergraduate degree programs are available in the following areas: Biological Science (with options in Biology, Botany, Fresh Water Ecology, Microbiology and Zoology), Chemistry, Computer Science, Forensic Science, Mathematics, Medical Record Administration, Medical Technology, Physics, Radiologic Technology, Respiratory Therapy and Statistics.

Preprofessional programs are also available to prepare students for further study in schools of dentistry, medicine, veterinary medicine, and other areas. These programs are administered directly through the Dean's office by a preprofessional coordinator with the help of a committee appointed by the Dean.

Preprofessional preparation is also available to students in other health related areas such as nursing, occupational therapy, physical therapy, etc. However, the requirements of professional schools offering degrees and/or clinical training in any of these fields, although similar, vary significantly. Students desiring to take preprofessional work in any of these areas should consult with the Chairman of the Department of Allied Health Sciences prior to beginning their programs.

GRADUATE PROGRAMS

Graduate programs leading to a Master of Science degree are available in Biological Science, Computer Science, and Mathematical Science. Details concerning these programs may be found under the Departments of Biological Sciences and Mathematical Sciences, respectively.

PROGRAM PLANNING

Although suggested curricula are available in most areas, each student will plan his program in consultation with a faculty advisor appointed by the chairman of the major department or by the Dean of the College of Natural Sciences.

DEPARTMENT OF ALLIED HEALTH SCIENCES

Chairman: *Getting Bldg. BL 308, Phone 275-2741*

Faculty: *Butler, Johns, Laird, Rogers, Scott*

The Department of Allied Health Sciences offers the Bachelor of Science degree in four fields. In addition a series of courses is offered under the AHS designation:

ALLIED HEALTH SCIENCES - courses are designed in key areas of health services, including, administration, community health services, health law and ethics; planning, implementation and evaluation. Three graduate level courses are available. No degree is offered at this time.

MEDICAL RECORD ADMINISTRATION - the development, maintenance and administration of systems of storage, retrieval and release of patient health information. This program leads to a Bachelor of Science degree.

MEDICAL TECHNOLOGY - the identification of the nature and causes of disease through the use of precision instruments in the examination and analysis of samples of body fluids and tissues. This program leads to a Bachelor of Science degree.

RADIOLOGIC TECHNOLOGY - the operation of x-ray machines as diagnostic aids of broken bones, fractured skulls, diseases of the heart and lungs, cancer of the breast, brain tumors, and many other diseases; use of radiation from x-ray machines and other sources of radioactivity for therapeutic purposes under the direction of a physician skilled in radiology. This program leads to a Bachelor of Science degree.

RESPIRATORY THERAPY - the treatment, management, control and care of patients with deficiencies and abnormalities associated with the breathing process, through the therapeutic use of such aids as medical gases, oxygen administering apparatus, aerosols, chest physical therapy, cardiopulmonary resuscitation and mechanical airways. This program leads to a Bachelor of Science degree.

The first two years of study in allied health sciences constitute a specified preprofessional program of basic education similar, but not identical, for all programs. The student then completes the professional phase of the program of his choice. Admission to study in this department does not constitute admission to the clinical (professional) year(s). Such admission is dependent upon the student's performance prior to this stage in his education and the availability of openings in the clinical facility. Separate application must be made to the clinical portion of the

program at least six months, but no more than one year, prior to the time the student is ready for admission.

Today's health care industry can best be described as dynamic, both from efforts within itself to seek new and improved health care delivery systems and from developments without, as seen in the rapid expansion of scientific knowledge and continuing medical advances. This has led to an increasingly critical need for highly trained personnel in an ever-widening variety of professional health fields. The present potential for programs of care, treatment and prevention of disease and disability is on a scale and of a quality never before envisioned. However, this potential can only be realized with the support of skilled professional personnel in the specialized health fields.

The department of Allied Health Sciences offers the educational opportunities and clinical experience to prepare the health professional. The student must be prepared and willing to accept a multifaceted role as a member of the health care team — as administrator, planner, consultant, educator, researcher and practitioner. Professional competence is built upon a solid grounding in the humanities, social sciences and natural sciences. The programs are designed to include not only the development of skills to assure excellence in quality of health care, but such experiences and factual knowledge as will provide the basis for continuing intellectual and professional growth.

Graduates are prepared for positions in hospitals, medical and hospital laboratories, outpatient facilities, research centers, clinics, and in local, state and national health agencies and departments.

The degree requirements in each of the programs offered by the Department of Allied Health Sciences are summarized below:

AREA	PROGRAM			
	Respiratory Therapy	Med Rec Admin	Med Tech	Radiologic Tech
Environmental Studies	69	69	69	69
Major (inc. College requirements)	103	105	102	119
Electives	15	13	16	0
TOTAL	187	187	187	188

Required courses leading to the Bachelor of Science degree in Medical Record Administration, Medical Technology, Radiologic Technology, and Respiratory Therapy are identified by course number in the curricula which follow. (NOTE: The curricula shown under Medical Technology, Program 2, is for those students who desire to take their clinical training entirely during the fourth year.) Following completion of the three years of study as outlined, the student must satisfactorily complete one full calendar year of study (46 quarter hours) with a grade point average of "C" or better at a hospital having a medical technology program approved by Florida Technological University, The Council of Medical Education of the American Medical Association, the American Society of Clinical Pathologists and the American Society of Medical Technologists. Approved hospitals in the Orlando area are: Florida Hospital, Orange Memorial Hospital and Winter Park Memorial Hospital.

The program in Respiratory Therapy is approved by the Council on Medical Education of the American Medical Association in collaboration with the American Associa-

tion for Respiratory Therapy, the American College of Chest Physicians, and the American Society of Anesthesiologists. The program in Medical Record Administration is approved by the Council on Medical Education of the American Medical Association in cooperation with the Education and Registration Committee of the American Medical Record Association.

Program accreditation in Radiologic Technology has been applied for and is expected to be granted by the Fall 1975.

**SUGGESTED PROGRAM FOR
RESPIRATORY THERAPY**

FIRST YEAR	F	W	S
Biological Sciences (BIOL 110, ZOOL 100)	5		4
Chemistry (CHEM 111, 112, 113)	5	3	3
(CHEM 264, 115)		1	1
Communications (ENG 101, SPE 101)	4	3	
Mathematics ¹		4	4
Social Sciences	3	3	3
TOTAL	17	14	15

SECOND YEAR	F	W	S
Biological Sciences (ZOOL 324)	5		
(ZOOL 334, MICR 200)		5	4
Cultural & Historical Foundations	4	4	4
Physics (PHYS 201, 202, 380)	4	4	4
Social Sciences	3		
Statistics (STAT 201)			4
Electives		3	
TOTAL	16	16	16

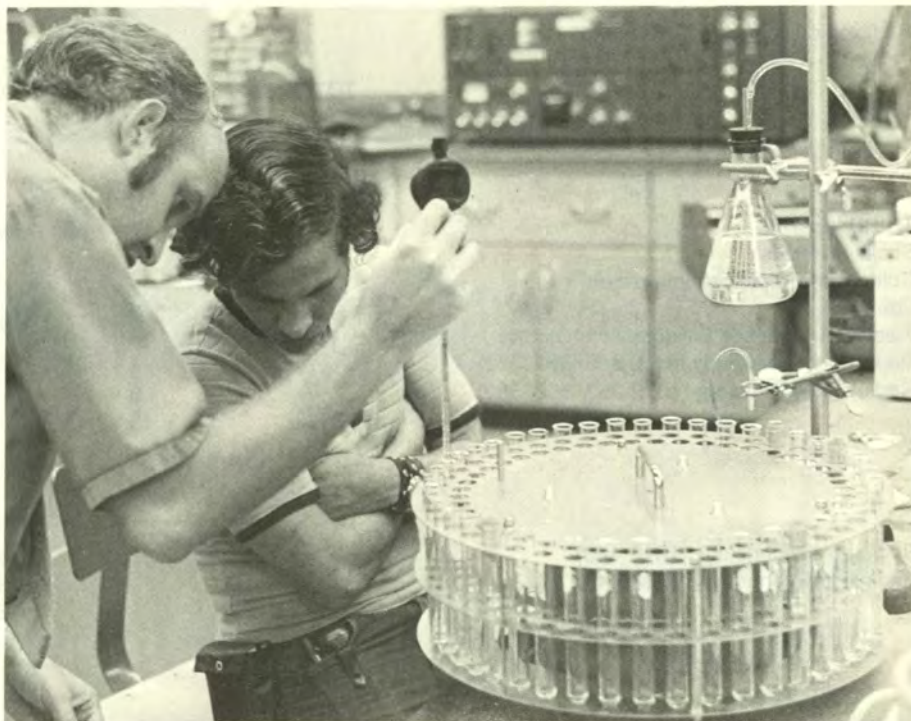
¹To be selected in consultation with the student's advisor from courses numbered MATH 106 or higher.

THIRD YEAR	F	W	S
Biological Sciences (MICR 320)	4		
Business	3		
Communication (ENG 310)	3		
Education			3
Engineering		3	
Respiratory Therapy (RTH 350, 352, 380)	3	3	3
(RTH 351, 353, 381)	1	1	1
(RTH 370, 330)		3	3
(RTH 371, 331)		1	1
(RTH 340)			3
(RTH 301, 302)		2	2
Electives (Advanced Environmental Studies)	3	3	
TOTAL	17	16	16

FOURTH YEAR

	F	W	S
Allied Health Sciences (AHS 330)	3		
Respiratory Therapy (RTH 462, 460, 410)	3	3	2
(RTH 463, 461)	1	1	
(RTH 440, 442, 420)	3	3	3
(RTH 430)			3
(RTH 431)			1
(RTH 401, 402, 403)	2	2	2
AHS Electives ²	3		3
Electives		6	
TOTAL	15	15	14
TOTAL QTR. HOURS REQUIRED			187

²To be selected in consultation with the student's advisor.



SUGGESTED PROGRAM FOR RADIOLOGIC TECHNOLOGY

FIRST YEAR

	F	W	S	Su
Biological Sciences (BIOL 110; ZOOL 100; MICR 200)	5	4	4	
Chemistry (CHEM 111, 112, 113)	5	3	3	
(CHEM 115) (CHEM 264)		1	1	
Communications (ENG 101; SPE 101)	4	3		
Social Sciences	3			
Cultural and Historical Foundations (HUM 201)			4	
Mathematics (MATH 106)		4		
Business (MGMT 301)			3	
TOTAL	17	15	15	

SECOND YEAR

	F	W	S	Su
Allied Health Sciences (AHS 401, 402, 403)	2	2	2	
Allied Health Sciences (AHS 320)	3			
Biological Sciences (ZOO 324, 334)		5	5	
Physics (PHYS 201, 202, 380)	4	4	4	
Statistics (STAT 301)	4			
Computer Sciences (COMP 303, 484)	3	3		
Communications (ENG 310)			3	
Cultural and Historical Foundations (HIST)		4		
Engineering (ENGR 48X)		3		
TOTAL	16	17	18	

Radiologic Technology ¹ (RTE 340)				3
(RTE 342)				3
TOTAL				6

THIRD YEAR²

	F	W	S	Su
Social Sciences	3	3	3	
Cultural and Historical Foundation	4			
Education		3		
Electives (Advanced Environmental Studies)			3	
Radiologic Technology (RTE 350, 360, 380)	4	4	4	
Radiologic Technology (RTE 352, 362, 382)	3	3	3	
TOTAL	14	13	13	

Radiologic Technology ¹ (RTE 440)				3
Radiologic Technology ¹ (RTE 442)				3
TOTAL				6

FOURTH YEAR²

	F	W	S	Su
Electives (Advanced Environmental Studies)	3			
Radiologic Technology (RTE 450, 460, 480)	4	5	5	
Radiologic Technology (RTE 452, 462, 482)	3	4	4	
Radiologic Technology (RTE 454, 464, 484)	3	3	4	
TOTAL	13	12	13	
TOTAL QUARTER HOURS REQUIRED				188

¹Student must take Radiologic Technology courses during the Summer Quarter in order to complete 24 months requirements for accreditation by the American Medical Association.

²Required college courses during 3rd and 4th year can be taken at F.T.U. Resident Center or community college adjacent to hospital facilities in Daytona Beach, or main F.T.U. campus.

SUGGESTED PROGRAM FOR MEDICAL RECORD ADMINISTRATION

FIRST YEAR	F	W	S
Biological Sciences (BIOL 110)		5	
Communications (ENG 101, SPE 101, ENG 103)	4	3	3
Cultural and Historical Foundation (HUM 201, - -, - -)	4	4	4
Mathematics (MATH 107)	5		
Social Sciences	4	4	4
Elective			3
TOTAL	17	16	14

SECOND YEAR	F	W	S
Allied Health Sciences (AHS 305)			5
Biological Sciences (ZOOL 324, ZOOL 334)	5	5	
Communications (COM 311, ENG 310)	4		3
Mathematics (STAT 201 or 301)		4	
Physical Sciences	4	4	4
Electives	3	3	4
TOTAL	16	16	16

THIRD YEAR	F	W	S
Allied Health Sciences (AHS 320, 350)	3	3	
(AHS 440, 441)	4	4	
Business (MGMT 301)	3		
Education			3
Management (MGMT 311, 364)		4	4
Medical Record Administration (MRA 300, 301, 302)	3	5	4
(MRA 370, 371)		1	1
Electives (Environmental Studies Program)	3		3
TOTAL	16	17	15

FOURTH YEAR	F	W	S
Allied Health Sciences (AHS 420, 495, 410 ¹)	3	3	4
Engineering		3	
Management (MGMT 402)		4	
Mathematics (COMP 303, 484)	3	3	
Medical Record Administration (MRA 403, 421 ¹)	5		3
(MRA 472, 473, 474 ²)	2	1	4
(MRA 492 ¹)			3
Science (SCI 486)	3		
TOTAL	16	14	14

TOTAL QUARTER HOURS REQUIRED 187

¹Six-week course (start of quarter)
²Four-week affiliation (end of quarter)

SUGGESTED PROGRAM FOR MEDICAL TECHNOLOGY

Program 1. Four years at Florida Technological University in which clinical training starts in the third year at a cooperating hospital. This program is not currently available but is planned for implementation in the future.

Program 2. Three years at Florida Technological University plus one calendar year at an approved hospital school of medical technology.

FIRST YEAR	F	W	S
Biological Science (BIOL 110, MICR 200)	5		4
Chemistry (CHEM 111, 112, 113) ¹	5	3	3
(CHEM 264, 115)		1	1
Communications (SPE 101, ENG 101)	3	4	
Mathematics ²		4	3
Social Sciences	3	3	3
TOTAL	16	15	14

SECOND YEAR	F	W	S
Allied Health Science Elective ³			3
Biological Sciences (MICR 300, ZOOL 334)			
Business (MGMT 301)	5	5	3
Chemistry (CHEM 251, 351, 352)	2	3	3
Cultural & Historical Foundations	4	4	4
Physics (PHYS 201, 202)	4	4	
Social Sciences			3
TOTAL	15	16	16

THIRD YEAR	F	W	S
Allied Health Science (AHS 330)	3		
Allied Health Science (AHS 420)	3		
Biological Sciences (MICR 320, 381)	4	3	
Chemistry (CHEM 355) ¹	4		
Communications (ENG 310)		3	
Education			3
Engineering			3
Statistics (STAT 201)		4	
Electives (Advanced Environmental Studies)	3		3
Restricted Electives ⁴		4	3
Electives		3	3
TOTAL	17	16	15

¹An alternate track is CHEM 261, 262, 263, 264 (Freshman); CHEM 321, 322, 323, 324 (Sophomore); Biochemistry (Junior).

²To be selected from courses numbered MATH 106 or higher. COMP 102 may be substituted for one math course.

³To be selected in consultation with the student's advisor from the Allied Health Sciences.

⁴To be selected in consultation with the student's advisor from the Allied Health, Biological Mathematical and Physical Sciences.

FOURTH YEAR

	F	W	S
Approved Hospital Program of 46 quarter credit hours			
MEDT 440 Clinical Bacteriology	9		
MEDT 442 Clinical Chemistry	10		
MEDT 443 Clinical Blood Banking	5		
MEDT 444 Clinical Hematology	10		
MEDT 445 Clinical Mycology	1		
MEDT 446 Clinical Parasitology	3		
MEDT 447 Clinical Serology	3		
MEDT 448 Clinical Urinalysis	3		
MEDT 449 Clinical Coagulation	2		
	TOTAL	46	
TOTAL QTR. HOURS REQUIRED			187

DEPARTMENT OF BIOLOGICAL SCIENCES

Chairman: *Miller*, Bldg. BL 211, Phone 275-2141

Faculty: *Charba, Ehrhart, Ellis, Gennaro, Koevenig, Kuhn, Osborne, Reynolds, Snelson, Stout, Sweeney, Sweet, Taylor, Vander Molen, Vickers, Washington, White, Whittier, Wodzinski.*

The Department of Biological Sciences offers a Bachelor of Science in Biological Science with options in biology, botany, fresh water ecology, microbiology and zoology, as well as the Master of Science in Biological Science.

In an age when new discoveries are reported daily on both celestial and molecular levels, the study of living organisms has gained new importance among the sciences. Students in the life sciences find themselves increasingly in demand in teaching and many phases of research. The program in biological science allows for the selection of an option in biology for those students seeking a broad and varied background; or botany, the study of plants; or fresh water ecology, the study of the environment of inland waters; or microbiology, the study of bacteria and viruses; or zoology, the study of animals. Through the judicious selection of electives in consultation with a faculty advisor, a specialty field, such as physiology, may be emphasized in one or more of the options outlined above.

BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCE

The degree requirements in each of the options offered by the Department of Biological Sciences are summarized as follows:

OPTION	AREA		
	Env. Studies	Major ¹	Electives
Biology	69	89	29
Botany	69	92	26
Fresh Water Ecology	69	93	25
Microbiology	69	97	21
Zoology	69	93	25
TOTAL QTR. HOURS REQUIRED IN ALL OPTIONS			187

Required courses leading to the Bachelor of Science degree in Biological Science are identified by the course number in the following curricula.

¹Including College requirements.

SUGGESTED PROGRAM FOR BIOLOGY OPTION¹

FIRST YEAR	F	W	S
Biological Sciences (BIOL 110) (BOT 100, ZOOL 100)	5	4	4
Chemistry (CHEM 261, 262, 263) (CHEM 264, 251)	4	3	3
Communications (ENG 101, SPE 101)	4	3	
Mathematics ²	4	4	4
Electives			3
TOTAL	17	15	16

SECOND YEAR	F	W	S
Biological Sciences (MICR 200, BIOL 360) (BIOL 332 or MICR 430)	4	4	5
Chemistry (CHEM 321, 322, 323) (CHEM 324)	4	3	3
Cultural and Historical Foundations	4	4	2
Physics (PHYS 201, 202)	4	4	
Statistics (STAT 301)			4
TOTAL	16	15	14

THIRD YEAR	F	W	S
Biological Sciences (BIOL 350, BOT elective, ZOOL elective)	4	4	4
Chemistry (CHEM 351, 352, or CHEM 441, 442)		3	3
Communications (ENG 310)	3		
Business			3
Engineering			3
Education		3	
Social Sciences	3	3	
Cultural and Historical Foundations	4		
Electives	3	4	3
TOTAL	17	17	16

FOURTH YEAR	F	W	S
Biological Sciences (Electives from BIOL, BOT, MICR, or ZOOL) ³	6	4	6
Social Sciences		3	3
Electives (Advanced Environmental Studies)	6		
Electives	3	8	5
TOTAL	15	15	14

TOTAL QTR. HOURS REQUIRED 187

¹Students expecting to enter graduate school should seriously consider taking at least three quarters of a foreign language. In addition, students planning on graduate study in the biological sciences should take additional courses in statistics and chemistry.

²To be selected in consultation with the student's advisor from courses numbered MATH 106 or higher.

³To be selected in consultation with and with approval of the student's advisor.

SUGGESTED PROGRAM FOR BOTANY OPTION¹

FIRST YEAR

	F	W	S
Biological Sciences (BIOL 110)	5		
(BOT 100, ZOOL 100)		4	4
Chemistry (CHEM 261, 262, 263)	4	3	3
(CHEM 264, 251)		1	2
Communications (ENG 101, SPE 101)	4	3	
Mathematics ²	4	4	4
Electives			3
TOTAL	17	15	16

SECOND YEAR

	F	W	S
Biological Sciences (MICR 200)	4		
(BIOL 360, BIOL 332 or MICR 430)		4	5
Chemistry (CHEM 321, 322, 323)	4	3	3
(CHEM 324)			2
Cultural and Historical Foundations	4	4	
Physics (PHYS 201, 202)	4	4	
Statistics (STAT 301)			4
TOTAL	16	15	14

THIRD YEAR

	F	W	S
Biological Sciences (BOT 320 or 325)	5 (4)		
(BIOL 350)			4
(Electives from CHEM 351, 352 or CHEM 441, 442; or electives from BIOL, MICR or ZOOL) ³		3	3
Communications (ENG 310)	3		
Business	3		
Education		3	
Engineering			3
Social Sciences	3	3	
Cultural and Historical Foundations		4	
Electives	3 (4)	4	5
TOTAL	17	17	15

FOURTH YEAR

	F	W	S
Biological Sciences (BOT 345, 430)	5	4	
(BIOL 455)			4
(Electives from BOT) ³	4	4	
Social Sciences		3	3
Electives (Advanced Environmental Studies)	6		
Electives		4	8
TOTAL	15	15	15
TOTAL QTR. HOURS REQUIRED			187

¹Students expecting to enter graduate school should seriously consider taking at least three quarters of a foreign language. In addition, students planning on graduate study in the biological sciences should take additional courses in statistics and chemistry.

²To be selected in consultation with the student's advisor from courses numbered MATH 106 or higher.

³To be selected in consultation and with approval of the student's advisor.

SUGGESTED PROGRAM FOR FRESH WATER ECOLOGY OPTION¹

FIRST YEAR	F	W	S
Biological Sciences (BIOL 110)	5		
(BOT 100, ZOOL 100)		4	4
Chemistry (CHEM 261, 262, 263)	4	3	3
(CHEM 264, 251)		1	2
Communications (ENG 101, SPE 101)	4	3	
Mathematics ²	4	4	4
Electives			3
TOTAL	17	15	16
SECOND YEAR	F	W	S
Biological Sciences (MICR 200)	4		
(BIOL 360, BIOL 332 or MICR 430)		4	5
Chemistry (CHEM 321, 322, 323)	4	3	3
(CHEM 324)			2
Cultural and Historical Foundations	4	4	
Physics (PHYS 201, 202)	4	4	
Statistics (STAT 301)			4
TOTAL	16	15	14
THIRD YEAR	F	W	S
Biological Sciences (BIOL 350)	4		
(ZOOL 445)			4
(ZOOL 442, BOT 441)	5		4
Communications (ENG 310)			3
Business	3		
Engineering			3
Education		3	
Social Sciences	3	3	
Cultural and Historical Foundations		4	
Computer Sciences (COMP 102)		3	
Electives		4	2
TOTAL	15	17	16
FOURTH YEAR	F	W	S
Biological Sciences (BIOL 450, 451)	5	5	
(Electives from biological sciences or CHEM) ³	4		4
Social Sciences		3	3
Electives (Advanced Environmental Studies)	6		
Electives ⁴		8	8
TOTAL	15	16	15
TOTAL QTR. HOURS REQUIRED			187

¹Students expecting to enter graduate school should seriously consider taking at least three quarters of a foreign language. In addition, students planning on graduate study in the biological sciences should take additional courses in statistics and chemistry.

²To be selected in consultation with the student's advisor from courses numbered MATH 106 or higher.

³To be selected in consultation and with approval of the student's advisor.

⁴It is recommended that the student consider taking ENGR 361 as one of the electives.

SUGGESTED PROGRAM FOR MICROBIOLOGY OPTION¹

FIRST YEAR

	F	W	S
Biological Sciences (BIOL 110)	5		
(ZOO 100, BOT 100)		4	4
Chemistry (CHEM 261, 262, 263)	4	3	3
(CHEM 264, 251)		1	2
Communications (ENG 101, SPE 101)	4	3	
Mathematics ²	4	4	4
Electives			3
TOTAL	17	15	16

SECOND YEAR

	F	W	S
Biological Sciences (MICR 200)	4		
(BIOL 360; elective from Bio. Sci. or CHEM)		4	5
Chemistry (CHEM 321, 322, 323)	4	3	3
(CHEM 324)			2
Cultural and Historical Foundations	4	4	
Physics (PHYS 201, 202)	4	4	
Statistics (STAT 301)			4
TOTAL	16	15	14

THIRD YEAR

	F	W	S
Biological Sciences (MICR 300, 451)	5	4	
(BIOL 350, MICR 320)	4		4
Chemistry (CHEM 441, 442)	3	3	
(CHEM 351, 352)		3	3
Communications (ENG 310)	3		
Engineering			3
Education		3	
Social Sciences		3	3
Cultural and Historical Foundations			4
TOTAL	15	16	17

FOURTH YEAR

	F	W	S
Biological Sciences (MICR 381, 382)	3	3	
(MICR 430)			4
(Electives from biological sciences) ³	3		
Business		3	
Social Sciences		3	3
Electives (Advanced Environmental Studies)	6		
Electives	4	7	7
TOTAL	16	16	14
TOTAL QTR. HOURS REQUIRED			187

¹Students expecting to enter graduate school should seriously consider taking at least three quarters of a foreign language. In addition, students planning on graduate study in the biological sciences should take additional courses in statistics and chemistry.

²To be selected in consultation with the student's advisor from courses numbered MATH 106 or higher.

³To be selected in consultation with and with approval of student's advisor.

SUGGESTED PROGRAM FOR ZOOLOGY OPTION¹

FIRST YEAR	F	W	S
Biological Sciences (BIOL 110)	5		
(BOT 100, ZOOL 100)		4	4
Chemistry (CHEM 261, 262, 263)	4	3	3
(CHEM 264, 251)		1	2
Communications (ENG 101, SPE 101)	4	3	
Mathematics ²	4	4	4
Electives			3
TOTAL	17	15	16
SECOND YEAR	F	W	S
Biological Sciences (MICR 200)	4		
(BIOL 360, BIOL 332 or MICR 430)		4	5
Chemistry (CHEM 321, 322, 323)	4	3	3
(CHEM 324)			2
Cultural and Historical Foundations	4	4	
Physics (PHYS 201, 202)	4	4	
Statistics (STAT 301)			4
TOTAL	16	15	14
THIRD YEAR	F	W	S
Biological Sciences (BIOL 350, ZOOL 340)	4		4
(ZOOL 423 or 322) ³			5
(Electives from ZOOL) ⁴	4	4	
Communications (ENG 310)	3		
Engineering			3
Education		3	
Social Sciences		6	
Cultural and Historical Foundations			4
Electives	4	3	
TOTAL	15	16	16
FOURTH YEAR	F	W	S
Biological Sciences (ZOOL 442, 330)	5		5
(BIOL 460, 350)	4		3
Business		3	
Social Sciences	3	3	
Electives (Advanced Environmental Studies)		3	3
Electives	5	5	5
TOTAL	17	14	16
TOTAL QTR. HOURS REQUIRED			187

¹Students expecting to enter graduate school should seriously consider taking at least three quarters of a foreign language. In addition, students planning on graduate study in the biological science should take additional courses in statistics and chemistry.

²To be selected in consultation with the student's advisor from courses numbered MATH 106 or higher.

³This requirement may be meet by ZOOL 326 and 327.

⁴To be selected in consultation and with approval of the student's advisor.

MASTER OF SCIENCE IN BIOLOGICAL SCIENCE

The Department of Biological Sciences offers graduate work leading to the Master of Science in Biological Science. Research studies and courses are available in biology, botany, fresh water ecology, microbiology and zoology. For information on specific areas of study contact the Departmental Graduate Program Coordinator.

ADMISSION REQUIREMENTS

Students admitted for graduate work must have a baccalaureate degree and must meet the University graduate school admission requirements. The admission policy is based on a departmental evaluation of the applicant's potential for academic success with the possibility to become a productive scholar, teacher or research investigator in the Biological Sciences. It is expected that students will have the equivalent of general biology (12 credits), botany (4 credits), organic chemistry (8 credits), mathematics (4 credits), microbiology (4 credits), and zoology (4 credits) at the time they begin graduate study or that they will remedy deficiencies as soon as possible upon entering the program. No criteria other than these are used to select students, although prior to graduation students will have to demonstrate proficiency in the basic principles of chemistry and mathematics as applied to biology, as well as in general biology, botany, microbiology and zoology.

PROGRAM

Each graduate student's program of study will vary depending upon the area of specialization and will be set up by the student and his or her advisory committee. Students may elect either a 45 hour thesis program in Biological Science with an option in biology, microbiology or zoology, or a 54 hour research report (non-thesis) program in biology. Students in both programs will take a core of four courses: BIOL 618, FIELD METHODS IN BIOLOGY; BIOL 619, LAB METHODS IN BIOLOGY; BIOL 675, CONTEMPORARY STUDIES IN ENVIRONMENTAL BIOLOGY; and BIOL 692, SEMINAR. Students taking the research thesis route must take a core of three more courses in one of the options. **Biology Option:** BIOL 520, CELL BIOLOGY; BIOL 563, EVOLUTIONARY BIOLOGY; BIOL 653, POPULATION ECOLOGY. **Microbiology Option:** MICRO 524, INFECTIOUS PROCESS; MICRO 570, VIROLOGY; MICRO 633, MICROBIAL METABOLISM. **Zoology Option:** BIOL 653, POPULATION ECOLOGY; ZOOL 632, COMPARATIVE ANIMAL PHYSIOLOGY; One or more of the following — ZOOL 545, BIOLOGY OF FISHES; ZOOL 546, HERPETOLOGY; ZOOL 544, ORNITHOLOGY; ZOOL 548, MAMMALOGY. The remainder of the program will consist of a maximum of 9 credit hours for thesis and courses determined by the student's advisory committee. Students electing the research report (non-thesis) route must take the core in the Biology Option and three hours of BIOL 698, RESEARCH REPORT which entails a library or a laboratory problem. The remainder of the program will consist of course work determined by the student's advisory committee. Each program must comply with all University requirements.

DEGREE REQUIREMENTS

A 3.0 grade point average must be maintained by all graduate students. The thesis program requires a minimum of 45 quarter hours of graduate credit including the thesis. The non-thesis program requires a minimum of 54 quarter hours of graduate

credit including the research report. At least one-half of the courses must be exclusively graduate level (600 series). A written departmental qualifying examination is given prior to completion of 15 graduate credits and a final comprehensive oral examination is required following completion of an acceptable thesis or research report.

RESIDENCY REQUIREMENTS

A minimum of 33 quarter hour credits must be earned at Florida Technological University. Normally, courses completed more than five years previous to the quarter in which the degree is earned may not be used toward meeting degree requirements. A student must be registered in the quarter in which the degree is earned.



DEPARTMENT OF CHEMISTRY

Chairman: Baker Bldg. SCI 117, Phone 275-2246

Faculty: Clausen, Cunningham, Hertel, Idoux, Juge, Knudson, Kujawa (Geology), Madsen, Mattson, McGee (Forensic Science), Youngblood.

The Department of Chemistry administers two baccalaureate degree programs: Bachelor of Science in Chemistry and Bachelor of Science in Forensic Science.

The chemistry curriculum provides the student with an opportunity to develop his ability to think creatively in a dynamic field of human endeavor. Because chemists contribute to a broad spectrum of man's efforts to understand and control his physical environment, the student of chemistry has considerable latitude in his choice of career. He may elect to probe into the nature of the bonding forces that hold molecules together or to seek answers to biological phenomena. A chemist's colleagues might be physicists, physiologists or psychologists. Some of the appeal, therefore, of chemistry is its position as a bridge to other fields of knowledge. As a result, the curriculum has been made sufficiently flexible to permit the student to prepare himself for one or more of the many career possibilities that arise from the

unique position that chemistry occupies in the sciences.

A student will, upon graduation, find opportunities for employment in industry, government service and education. Positions may entail basic research or applied research, product development or control, sales, management or teaching.

A chemistry graduate, should he choose to do so, will be in a position to continue his training at the graduate level and to qualify for a more demanding position in the profession.

The degree requirements in chemistry are distributed as follows:

Environmental Studies	69
Major (including College requirements)	108
Electives	12
TOTAL	189

Required courses leading to the Bachelor of Science Degree in chemistry are identified by course number in the following curriculum. This program is fully accredited by the Committee on Professional Training of the American Chemical Society.

SUGGESTED PROGRAM FOR CHEMISTRY

FIRST YEAR	F	W	S
Biological Sciences	4	4	4
Chemistry (CHEM 261, 262, 263)	4	3	3
(CHEM 264, 251)		1	2
Communications (ENG 101, SPE 101)	4	3	
Electives			3
Mathematics (MATH 211, 321, 322)	3	4	4
TOTAL	15	15	16

SECOND YEAR	F	W	S
Chemistry (CHEM 321, 322, 323)	4	3	3
(CHEM 351, 352, 324)	3	3	2
Computer Science (COMP 102 or 302)			3
Mathematics (MATH 323, 324)	4	4	
Physics (PHYS 211, 212, 213)	4	4	4
(PHYS 282, 283)		1	1
Statistics (STAT 301)			4
TOTAL	15	15	17

THIRD YEAR	F	W	S
Chemistry (CHEM 361, 362, 363)	5	3	3
(CHEM 325, 364, 365)	2	2	2
(CHEM 431)			4
Cultural and Historical Foundations ¹	4	4	4
Physics (PHYS 380 or 381)		4	
Social Sciences ¹	4	4	4
TOTAL	15	17	17

¹One year of a foreign language will replace 4 hours of Cultural-Historical Foundations and 4 hours of Social Sciences. Those students intending to pursue graduate studies are urged to take two years of a foreign language. German is recommended.

FOURTH YEAR	F	W	S
Chemistry (CHEM 451)	5		
(CHEM 497, 497)		3	3
(CHEM Elective)	3	3	3
Communications (ENG 310)			3
Business	3		
Education		3	
Engineering			3
Electives	3	3	3
Electives (Advanced Environmental Studies)	3	3	
	TOTAL	17	15
TOTAL QTR. HOURS REQUIRED			189

Forensic Science is that branch of science which serves the scientific needs of the justice system. Forensic Science at Florida Technological University is a degree program emphasizing "the scientific aspects of physical evidence valuation". Physical evidence can, quite literally, be anything and everything. It can range from a slug recovered from a bank robbery to an air sample collected near a suspect source of pollution. Regardless of its source, physical evidence must be carefully packaged, scientifically examined, and protected during its journey from suspect crime scene to courtroom. This is the job of the forensic scientist.

There are two subspecialties within the degree program: criminalistics and civilistics. The curricula of both subspecialties emphasize a wide background of course work in natural science. Such a background will help the future forensic scientist draw reasonable and logical conclusions from his examinations and uphold his expert opinions in the courtroom. The principal difference in the two subspecialties centers on type of physical evidence examined and the court in which the testimony will be presented. The course work taken in the civilistics subspecialty will emphasize the processing of physical evidence from suspect civil law violation. Course work in the criminalistics subspecialty will emphasize the processing of physical evidence from suspect criminal law violations.

The highlight of the degree program (both subspecialties) is a required two quarter internship in a recognized forensic science laboratory.

A student will, upon graduation, find opportunities for employment in federal, state, and local crime laboratories, environmental and consumer protection agencies, and defense oriented legal assistance agencies.

The degree requirements in Forensic Science (both subspecialties) are distributed as follows:

Environmental Studies	69
Major (including College requirements)	74
Electives*	37
Total	<hr/> 180

*Depending upon the subspecialty, a student will select in consultation with his/her advisor, course work from approved lists of science, forensic science, criminal justice, or allied legal service courses. These courses then comprise the restricted electives.

SUGGESTED PROGRAM FOR FORENSIC SCIENCE

FIRST YEAR	F	W	S	Su
Biological Sciences (BIOL 110; BOT 100; MICR 200)	5	4	4	
Chemistry (CHEM 261, 262, 263)	4	3	3	
(CHEM 264, 251)		1	2	
Communications (ENG 101; SPE 101)	4	3		
Computer Science (COMP 102)			3	
Mathematics (MATH 107, 320)	5	4		
Social Sciences			4	
TOTAL	18	15	16	
SECOND YEAR	F	W	S	Su
Chemistry (CHEM 321, 322, 323)	4	3	3	
(CHEM 351, 352, 324)	3	3	2	
Cultural & Historical Foundations		4	4	
Restricted Electives ¹	5	3	3	
Physics (PHYS 201, 202, 380)	4	4	4	
TOTAL	16	17	16	
THIRD YEAR	F	W	S	Su
Social Sciences		4		
Forensic Science (FSC 301, 302 or 305, 356) ²	4	4	4	
Legal Procedure Courses				
(CRJ 301 & LES 302 or LES 301, 302) ²	4		4	
Restricted Electives ¹	4	5	5	
Statistics (STAT 301)	4			
TOTAL	16	13	13	
SUMMER FOLLOWING JUNIOR YEAR	F	W	S	Su
Cooperative Education (COOP 300)				0
Forensic Science (FSC 470)				4
TOTAL				4
FOURTH YEAR	F	W	S	Su
Business		3		
Cooperative Education (COOP 400)	0			
Cultural & Historical Foundations			4	
Education			3	
Engineering		3		
English (ENG 310)		3		
Forensic Science (FSC 470)	4			
Restricted Electives ³		4	8	
Social Sciences		4		
TOTAL	4	17	15	

TOTAL QTR. HOURS REQUIRED 180

¹Depending upon subspecialty (i.e., Criminalistics or Civilistics) a student will select, in consultation with his/her advisor, course work from approved lists of science courses.

²The choice reflects the basic difference in subspecialty areas: for example, FSC 302, CRJ 301 and LES 302 will be taken by criminalistics majors; FSC 305, LES 301 and 302 will be taken by civilistics majors.

³Depending upon the subspecialty (i.e., criminalistics or civilistics) a student will select, in consultation with his/her advisor, course work from approved lists of science, forensic science, criminal justice, or allied legal service courses.

DEPARTMENT OF MATHEMATICAL SCIENCES

Chairman: *E. Lytle*, Bldg. FA 461-B, Phone 275-2341

Faculty: *Andrews, Anthony, Armstrong, Barr, Brigham, Caron, A. Dutton, R. Dutton, Gerber, Heinzer, Hurst, Ingram, Jones, Lantz, Norman, O'Hara, Ostle, Pettofrezzo, Rautenstrauch, Rhein, Rodriguez, Salzmann, Sherwood, Somerville, Taylor, Wagner, Young.*

The Department of Mathematical Sciences offers courses and programs leading to a Bachelor of Science Degree in three closely related areas: Mathematics, Computer Science and Statistics. Emphasis is placed on the dual nature of the mathematical sciences: theoretical on the one hand and practical on the other. The Department also offers work leading to a Master of Science in Computer Science and a Master of Science in Mathematical Science.

Courses in the mathematical sciences at Florida Technological University are designed to serve five levels of students: (1) those who want to become professional mathematicians, statisticians or computer scientists; (2) those who need to use mathematics, statistics and computer science as tools in their specialty areas; (3) those who intend to teach mathematical sciences in secondary schools, colleges and universities; (4) those who want to prepare for, or undertake, graduate work in the mathematical sciences or related fields; (5) those who desire to increase their understanding of these important disciplines.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE, MATHEMATICS OR STATISTICS

The degree requirements in each of the three baccalaureate majors offered by the Department of Mathematical Sciences are summarized in the following table.

MAJOR	Env. Studies	AREA Major ¹	Electives
Computer Science	69	95	16
Mathematics	69	89	22
Statistics	69	93	18

SUGGESTED PROGRAM FOR COMPUTER SCIENCE

FIRST YEAR	F	W	S
Computer Science (COMP 205, 206, 307)	3	3	3
Mathematics (MATH 211)	3		
(MATH 321, 322, 323)	4	4	4
Biological Sciences	4	4	4
Communications (ENG 101, SPE 101)		4	3
Social Sciences			3
TOTAL	14	15	17

SECOND YEAR

	F	W	S
Mathematics (MATH 324, 271)	4	4	
Statistics (STAT 301)			4
Computer Science (COMP 305, 361, 303)	4	4	3
Cultural and Historical Foundations	4	4	4
Social Sciences	3	3	3
Electives			3
TOTAL	15	15	17

THIRD YEAR

	F	W	S
Mathematics (MATH 317, 314)	4	4	
Statistics (STAT 341, 342 or STAT 401, 402)	4	4	
Engineering (EECS 311)			4
Computer Science (COMP 306, 405)		4	4
Computer Science Electives ²			3
Physical Sciences	4	4	4
Communications (ENG 310)	3		
TOTAL	15	16	15

FOURTH YEAR

	F	W	S
Computer Science Electives ²	4	4	
Business	3		
Education		3	
Engineering			3
Electives (Advanced Environmental Studies)		3	3
Mathematical Sciences Electives ³	3		2
Electives	4	3	6
TOTAL	14	13	14
TOTAL QTR. HOURS REQUIRED			180

¹Including College requirements.

²Computer Science majors must take three courses from the following: COMP 401, 408, 411, 487 and ENGR 442.

³Mathematical Sciences electives are any Mathematics, Statistics or Computer Science courses at 300 or 400 level and may include EECS 414.

SUGGESTED PROGRAM FOR MATHEMATICS

FIRST YEAR

	F	W	S
Computer Science (COMP 205)		3	
Mathematics (MATH 211, 271)	3	4	
(MATH 321, 322, 323)	4	4	4
Biological Sciences	4	4	4
Communications (ENG 101, SPE 101)	4		3
Cultural and Historical Foundations			4
TOTAL	15	15	15

SECOND YEAR	F	W	S
Computer Science (COMP 206) ¹		3	
Mathematics (MATH 324, 431)	4	4	
(MATH 318, 319)		4	4
Statistics (STAT 301)			4
Cultural and Historical Foundations	4		4
Social Sciences	4	4	4
Electives	4		
TOTAL	16	15	16

THIRD YEAR	F	W	S
Mathematics (MATH 421, 422, 423)	3	3	3
Mathematical Sciences Electives ²			4
Statistics (STAT 341, 342)	4	4	
Physical Sciences	4	4	4
Communications (ENG 310)			3
Electives	4	4	
TOTAL	15	15	14

FOURTH YEAR	F	W	S
Mathematics (MATH 411 or 461)		4	
Mathematical Sciences Electives ²	6	6	3
Business	3		
Education		3	
Engineering			3
Electives (Advanced Environmental Studies)	3	3	
Electives	3		7
TOTAL	15	16	13
TOTAL QTR. HOURS REQUIRED			180

SUGGESTED PROGRAM FOR STATISTICS

FIRST YEAR	F	W	S
Computer Science (COMP 205)		3	
Mathematics (MATH 211, 271)	3	4	
(MATH 321, 322, 323)	4	4	4
Biological Sciences	4	4	4
Communications (ENG 101, SPE 101)	4		3
Cultural and Historical Foundations			4
TOTAL	15	15	15

SECOND YEAR	F	W	S
Computer Science (COMP 206)		3	
Mathematics (MATH 324)	4		
Statistics (STAT 301, 332)	4	3	
Cultural and Historical Foundations	4		4
Social Sciences		4	8
Electives	3	6	4
TOTAL	15	16	16

THIRD YEAR	F	W	S
Statistics (STAT 341, 342)	4	4	
(STAT 401, 402, 415)	4	4	4
Mathematics (MATH 317)			4
Computer Science (COMP 481, 361)	4		4
Physical Sciences	4	4	4
Communications (ENG 310)		3	
TOTAL	16	15	16

FOURTH YEAR	F	W	S
Statistics (STAT 421, 411)		3	3
Mathematical Sciences Electives ²	3	6	6
Business	3		
Education		3	
Engineering			3
Electives (Advanced Environmental Studies)	3	3	
Electives	3		2
TOTAL	12	15	14
TOTAL QTR. HOURS REQUIRED			180

¹Those students with programming experience may replace COMP 205 and 206 with COMP 301.

²Mathematical Sciences electives must include at least thirteen hours from: ENGR 421, 442; EMCS 460; COMP 361, 481, 561, 565; or any upper division or graduate course in MATH or STAT except MATH 301, 311, 312, 320, 331, 351, 420, 428, 429.

MASTER OF SCIENCE IN COMPUTER SCIENCE OR MATHEMATICAL SCIENCE

The Department of Mathematical Sciences offers graduate work leading to the Master of Science in Computer Science and Master of Science in Mathematical Science.

The program in Computer Science emphasizes course work in the subdisciplines of applied software, computer organization, information systems, and numerical mathematics.

The program in Mathematical Science emphasizes applied techniques of mathematics, statistics, and computer science.

ADMISSION REQUIREMENTS

Students considered for admission to graduate work must have a baccalaureate degree from an accredited institution and must meet the University graduate studies admission requirements. Admission is also based on an evaluation by the Department of the applicant's background and potential for academic success. No previous academic training in the prospective major area is required; however, a student with a baccalaureate degree in another field will normally require additional preparation in foundation areas.

GENERAL REGULATIONS

Each student will be assigned an advisory committee of at least three faculty members. This committee will approve the student's program, determine that all degree requirements are met and administer a set of final examinations (written and/or oral) designed to evaluate the student's academic proficiency and his maturity in relating this knowledge to new situations. A total program of study must be established prior to registration for the thirteenth graduate quarter hour.

DEGREE REQUIREMENTS FOR THE MASTER OF SCIENCE IN COMPUTER SCIENCE

The following requirements must be met by each student before the Master of Science in Computer Science will be awarded. The student must:

1. Earn a minimum of 45 quarter hours credit;
2. Maintain a cumulative average of 3.0 (B) or better in all work specified in the degree program approved by his committee;
3. Pass a set of final examinations administered by the advisory committee;
4. Complete an acceptable thesis or research report;
5. Complete at least 27 quarter hours in Computer Science;
6. Complete at least 27 quarter hours at the 600 level;
7. Comply with all University requirements for the Master of Science degree.

DEGREE REQUIREMENTS FOR THE MASTER OF SCIENCE IN MATHEMATICAL SCIENCE

The following requirements must be met by each student before the Master of Science in Mathematical Science will be awarded. The student must:

1. Earn a minimum of 45 quarter hours credit;
2. Maintain a cumulative average of 3.0 (B) or better in all work specified in the degree program approved by his committee;
3. Pass a set of final examinations administered by the advisory committee;
4. Complete at least 34 quarter hours of course work in the mathematical sciences (MATH, STAT, or COMP);
5. Complete at least 23 quarter hours at the 600 level;
6. Comply with all University requirements for the Master of Science degree.

ADMISSION REQUIREMENTS

Students considered for admission to graduate work must have a baccalaureate degree from an accredited institution and must meet the University graduate studies admission requirements. Admission is based also on an evaluation by the departments of the applicant's background and potential for academic success. It is expected that the entering student will have taken the equivalent of at least one course in each of the following areas: data structures, computer organization, programming languages and systems programming, or that the student will remedy any deficiencies as soon as possible upon entering the program.

DEPARTMENT OF PHYSICS

Chairman: Noon, Bldg. EN 312, Phone 275-2325

Faculty: Bolemon, Bolte, Brennan, Haley, Henderson, Katzin, Oelfke

Physics is a basic science fundamental to many different fields of endeavor and the courses offered are designed to reflect this. The curriculum allows flexibility through electives for physics majors who wish to prepare for an interdisciplinary type of career by studying other areas of science in depth, as well as increased course content for students planning graduate study. In general, programs of electives, related to possible future careers, should be planned before the beginning of the sophomore year. Transfer students, however, will be advised on arrival in this regard. A complete physics program requires both lecture and laboratory courses. In lectures a wide range of physical phenomena, theoretical explanations and analysis techniques are discussed. In laboratory work, students make observations and measurements and analyze data obtained. At the upper division, independent investigation and the use of modern scientific instrumentation are emphasized. Students planning graduate study should include a foreign language and consult their faculty advisor about increased course content in upper level physics courses. Students terminating at a baccalaureate level will be advised of appropriate elective requirements. Planning to allow a double major will be encouraged where appropriate.

Students who are not majoring in physics may select from a variety of regularly offered courses to learn more about their physical environment and to understand and apply scientific methods (e.g., PHYS 100, 103, or SCI 483). Prospective teachers, either at the elementary or secondary level, may also take a sequence (PHYS 301, 302, 303) involving lectures, discussion and laboratory equipment. Life-science majors and preprofessional students are provided a special lecture-laboratory sequence (PHYS 201, 202, 380). Two interdisciplinary courses (PHYS 307, 343) are offered for students interested in biophysics and computing. Engineering students require two physics courses (PHYS 354, 344) as part of their core program. Chemistry and mathematics majors may choose the normal calculus-physics sequence (PHYS 211, 212, 213) with associated laboratory courses (PHYS 282, 283). Electronics (PHYS 335, PHYS 381) and Scientific Instruments Laboratory (PHYS 380) courses are also available.



The degree requirements consist of:

Environmental Studies Program	69
Major (inc. college requirements)	80
Electives	31
TOTAL QUARTER HOURS REQUIRED	180

Required courses leading to the Bachelor of Science degree in Physics are identified by course number in the following curriculum.

SUGGESTED PROGRAM FOR PHYSICS

FIRST YEAR	F	W	S
Biological Sciences	4	4	4
Communications (ENG 101, SPE101)		4	3
Mathematics (MATH 211)	3		
(MATH 321, 322, 323)	4	4	4
Physics (PHY 211, 212, 213)	4	4	4
Physics (PHYS 282, 283)		1	1
TOTAL	15	17	16

SECOND YEAR	F	W	S
Communications (ENG 310)			3
Computer Science (COMP 302)			4
Cultural & Historical Foundations ¹	4	4	4
Mathematics (MATH 324, 331)	4	4	
Physics (PHYS 311, 312, 313)	4	4	4
(PHYS 335)			3
Statistics (STAT 335)	3		
TOTAL	15	15	15

THIRD YEAR	F	W	S
Engineering			3
Physics (PHYS 314, 315, 343)	4	4	4
(PHYS 381, 382)	4	4	
Social Sciences ¹	3	3	3
Electives ²	4	4	4
TOTAL	15	15	14

FOURTH YEAR	F	W	S
Business	3		
Education		3	
Social Sciences ¹	3		
Restricted Electives ³	3	3	3
Electives (Advanced Environmental Studies)	3	3	
Electives	3	6	10
TOTAL	15	15	13
TOTAL QTR. HOURS REQUIRED			180

¹One year of a foreign language will replace 4 hours of Cultural and Historical Foundations and 4 hours of Social Sciences.

²The CHEM 26__ sequence is recommended.

³Upper division PHYS courses, or those satisfying double major requirements.

PREPROFESSIONAL PROGRAMS

Preprofessional Coordinator: *Laird*, Bldg. AD 214, Phone 275-2691

The Office of the Preprofessional Coordinator has been created to operate as a service to all students preparing for and seeking admission to a professional school of dentistry, medicine, optometry, pharmacy and veterinary medicine. The services afforded the student through this office are numerous and range from simple advising and counseling in preprofessional matters to providing a compiled preprofessional evaluation of the student to each professional school to which he desires to apply. Upon entering the preprofessional program at Florida Technological University, each student will be assigned to a faculty advisor within the academic department of his major. Each student is urged to take full advantage of the services available through this office.

PREMEDICAL, PREDENTAL AND PREVETERINARY PROGRAMS

Although many professional schools accept students who have satisfactorily completed three years of college and possess excellent credentials, a large and growing number require the completion of the baccalaureate degree. In any event, the applicant with given credentials and in possession of the baccalaureate degree will find himself in a much more competitive position for a place in a professional school than a comparable applicant not in possession of the degree. For this reason each predental, premedical and preveterinary student is urged to choose a degree granting program for a major since majors such as "premed" do not lead to the awarding of a degree. Also, each student is encouraged to pursue a degree program to prepare himself for an alternate career in the event he is denied a place in a professional school. The prospective preprofessional student may select as his major any degree granting program offered at Florida Technological University; however, those degree programs within the College of Natural Sciences will lend themselves most easily to the preprofessional preparation due to the nature and content of their curricula. While satisfying his degree requirements, the student will find in his curriculum many courses that are also admission requirements to most professional schools. In addition, he will find in his curriculum adequate elective hours with which, in consultation with his advisor, to obtain other needed courses not specifically contained within the curriculum of his degree program.

If the predental or premedical student completes all the courses listed in Table I, he will have satisfied the minimum specific course requirements for admission to all dental schools and to most medical schools as listed in the current editions of Admission Requirements of American Dental Schools, published by the American Association of Dental Schools, and Medical School Admission Requirements in the U.S.A. and Canada, published by the Association of American Medical Colleges. Each student is urged to consult these publications (available in the University Bookstore) to determine the specific admission requirements of the professional schools to which he is planning to make application.

The preveterinary student must complete all the courses listed in Table II in order to meet the minimum admission requirements of those schools of veterinary medicine participating with the State of Florida through the Southern Regional Educational Board (SREB) Plan. Information regarding specific application procedures to schools

of veterinary medicine may be obtained from the Office of the Preprofessional Coordinator.

Those students who successfully gain admission to a professional school after the completion of the junior year of a degree program within the College of Natural Sciences at Florida Technological University may apply for a Bachelor of Science degree after successfully completing the first year of study (not less than 45 quarter credit hours) with a grade point average of "C" or better at an approved professional school. Following completion of the first year of professional study, the student should request the dean of the professional school to forward to the Dean of the College of Natural Sciences at Florida Technological University a transcript of credits and a recommendation that the degree be conferred.

TABLE I.
PREDENTAL, PREMEDICAL REQUIREMENTS

Subject			Q.H.
BIOL	110	Basic Biology	5
BIOL	332 (or 520)	Cell Physiology (or Cell Biology)	5 (4)
BIOL	360	Genetics	4
CHEM	251	Analytical Fundamentals	2
CHEM	261, 262, 263	Chemistry Fundamentals	10
CHEM	264	Chemistry Fundamentals Lab	1
CHEM	321, 322, 323	Organic Chemistry	10
CHEM	324	Organic Chemistry Lab	2
CHEM	351, 352	Analytical Chemistry	6
CHEM	361	Physical Chemistry	5
ENG	101	Composition	3
ENG	103	Current Literature	3
ENG	310	Professional Report Writing	3
MATH	211 ¹	Analytic Geometry	3
MATH	321, 322, 323	Calculus	12
MICR	200	General Microbiology	4
PHYS	201, 202	College Physics	8
PHYS	380	Physics of Scientific Instruments	4
ZOOL	100	General Zoology	4
ZOOL	322	Vertebrate Histology	4
ZOOL	326, 327	Comparative Vertebrate Anatomy	8
ZOOL	423	Comparative Vertebrate Embryology	5
Foreign Language ²			12
Electives ³			

¹Students deficient in algebra and trigonometry must make up this deficiency before enrolling in MATH 211.

²Proficiency in Russian, German, French, Spanish or another foreign language approved by the student's advisor can be demonstrated by examination or by successful completion of 12 credits of the language. Students planning to enter a professional school requiring two years of a language should take an additional 3 quarters of the language.

³Electives should include courses applicable to the student's chosen major and professional goal as well as other courses, selected in consultation with the student's advisor, to complete the Environmental Studies Program. If, after completing all courses required for admission to the professional school and satisfying the degree requirements of the major, the student still has elective hours available, consideration should be given to the following courses: ACCY 211, 212; AHS 305, 320, 350; MGMT 301, 364; SOC 405.

TABLE II.
PREVETERINARY REQUIREMENTS

Subject			Q.H.
BIOL	110	Basic Biology	5
BIOL	360	Genetics	4
BOT	100	General Botany	4
CHEM	251	Analytical Fundamentals	2
CHEM	261, 262, 263	Chemistry Fundamentals	10
CHEM	264	Chemistry Fundamentals Lab	1
CHEM	321, 322, 323	Organic Chemistry	10
CHEM	324	Organic Chemistry Lab	2
CHEM	351	Analytical Chemistry	3
ENG	101	Composition	4
ENG	103 or 208	Literature or Creative Writing	3
ENG	310	Professional Reporting Writing	3
Foreign Language (one year)			12
History and Literature			12
C&H Group II (Literature, HUM, ART, or Music Appreciation only; select from two areas)			(8)
C&H Group III (HIST 201, 202, 203, 311, 312, 313)			(4)
HUM	201	Western Humanities Survey	4
MATH	211 ¹	Analytic Geometry	3
MATH	320	Concepts of Calculus	4
MICR	200	General Microbiology	4
MICR	300	Biology of Microorganisms	5
PHYS	201, 202	College Physics	8
PHYS	380	Physics of Scientific Instruments	4
Social Sciences			16
PCL 201 and any other courses from Social Sciences Gp I & II except COM 100			
STAT	301	Fundamentals of Probability and Statistics	4
ZOOL	100	General Zoology	4
Animal Science Courses ²			14

¹Students deficient in algebra and trigonometry must make up this deficiency before enrolling in MATH 211.

²The animal science courses must be taken as a transient student at an approved institution.

PREOPTOMETRY AND PREPHARMACY PROGRAMS

Although not required to pursue a degree granting program to satisfy admission requirements to professional schools, preoptometry and prepharmacy students are strongly urged to do so. Lists of courses designed to satisfy minimum admission requirements to professional schools of optometry and pharmacy are shown in the following tables.



**TABLE III.
PREOPTOMETRY REQUIREMENTS**

SUBJECT			Q.H.
BIOL	110	Basic Biology	5
BOT	100	General Botany	4
CHEM	251	Analytical Fundamentals	2
CHEM	261, 262, 263	Chemistry Fundamentals	10
CHEM	264	Chemistry Fundamentals Laboratory	1
CHEM	321, 322, 323	Organic Chemistry	10
CHEM	324	Organic Lab Techniques	2
ENG	101	Composition	4
ENG	103	Current Literature	3
ENG	310	Professional Report Writing II	3
MATH	211 ¹	Analytic Geometry	3
MATH	320	Concepts of Calculus	4
MICR	200	General Microbiology	4
MICR	210	Culture Media and Reagents	2
PHYS	201, 202	College Physics	8
PHYS	380	Physics of Scientific Instruments	4
ZOOL	100	General Zoology	4
Electives ²			27

**TABLE IV.
PREPHARMACY REQUIREMENTS**

SUBJECT			Q.H.
BIOL	110	Basic Biology	5
BOT	100	General Botany	4
CHEM	251	Analytical Fundamentals	2
CHEM	261, 262, 263	Chemistry Fundamentals	10
CHEM	264	Chemistry Fundamentals Laboratory	1
CHEM	321, 322, 323	Organic Chemistry	10
CHEM	324	Organic Laboratory Techniques	2
ENG	101	Composition	4
ENG	103	Current Literature	3
ENG	310	Professional Report Writing II	3
MATH	211 ¹	Analytic Geometry	3
MATH	320	Concepts of Calculus	4
MICR	200	General Microbiology	5
PHYS	201, 202	College Physics	8
PHYS	380	Physics of Scientific Instruments	4
ZOOL	100	General Zoology	4
Electives ³			36

¹Students deficient in algebra and trigonometry must make up this deficiency before enrolling in MATH 211.

²Approved electives may include: ACCY 211, 212; AHS 305, 320, 350, 440, 441; BADM 101; HIST 311, 312, 313; MGMT 301, 364; MRA 305; PSY 201, 202; SOC 201, 202; and other courses selected in consultation with the student's advisor to complete the Basic Program of the Environmental Studies Program.

³Approved electives may include: ACCY 211, 212; AHS 305, 320, 350, 440, 441; BADM 101; CHEM 351, 352; MGMT 301, 364; MRA 305; MICR 200, 300; STAT 301; and other courses selected in consultation with the student's advisor to complete the Basic Program of the Environmental Studies Program.

COLLEGE OF SOCIAL SCIENCES

AEROSPACE STUDIES

ALLIED LEGAL SERVICES

COMMUNICATION

COMMUNICATIVE DISORDERS

FILM

JOURNALISM

RADIO-TELEVISION

SPEECH

CRIMINAL JUSTICE

ECONOMICS

POLITICAL SCIENCE

PRE-LAW

PSYCHOLOGY

PUBLIC ADMINISTRATION

SOCIOLOGY

ANTHROPOLOGY

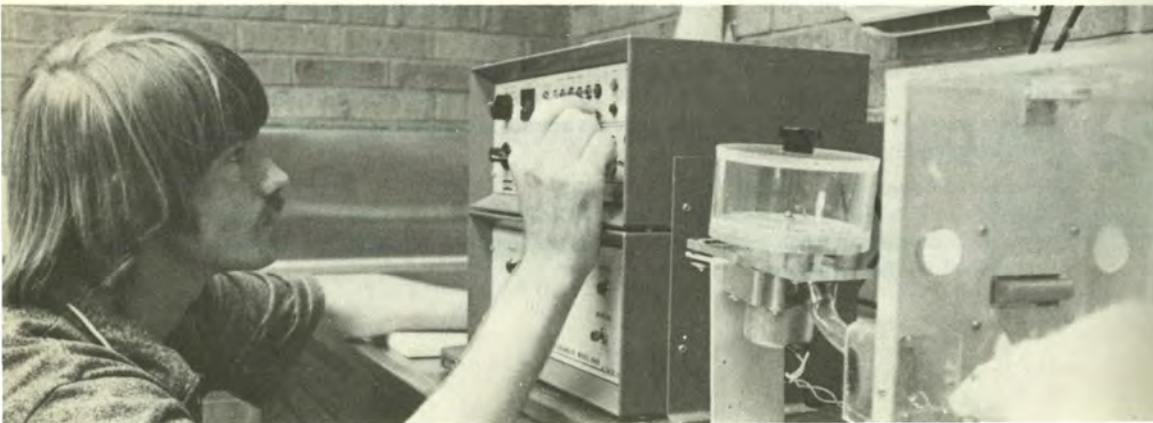
SOCIAL WORK

BACHELOR OF SCIENCE IN SOCIAL SCIENCES

MASTER OF ARTS IN COMMUNICATION

MASTER OF PUBLIC POLICY

MASTER OF SCIENCE IN PSYCHOLOGY



COLLEGE OF SOCIAL SCIENCES

DEAN: *B.C. Kissel*
ASSOCIATE DEAN: *J.B. Rollins*

In keeping with the aims of Florida Technological University, the College of Social Sciences provides a curricula designed: (1) to develop competence in specialized professional disciplines through academic and practical preparation; (2) to provide increased awareness of the development, purposes, and functioning of the social sciences in the world that surrounds us. The College awards the baccalaureate degree in the following areas: Allied Legal Services, Communication (Communicative Disorders, Journalism, Radio-Television-Film, Speech), Criminal Justice, Economics, Political Science (Public Administration, Pre-Law), Psychology, Sociology (Anthropology, Social Work), and Social Sciences. The College also awards the Masters Degree in Communication, Psychology, and Public Policy.

In addition to providing specialized training, the College of Social Sciences functions in a service capacity by making available a selection of courses designed to complement the offerings of the other five colleges of the University.

A student enrolled in the College as an undergraduate must fulfill all University degree requirements including the Environmental Studies Program, as well as the particular requirements set forth by the department for each area of specialization. To be certified for graduation, a student must achieve a "C" grade point average (2.0) in the courses of his major.

A student whose written or oral communication in any course is deemed unsatisfactory may be referred to the Dean by the instructor. Additional course work or an individual study program may be assigned consistent with the needs of the student and must be completed before the degree is granted.

AEROSPACE STUDIES

Chairman: *Major Whisenant*, Bldg. AD 249, Phone 275-2264
Faculty: *Captain Barucky, Captain Nicosia.*

The Department of Aerospace Studies provides pre-commissioning education for qualified students who desire to serve as commissioned officers in the active duty Air Force. The department offers both a two-year and a four-year commissioning program, each with its own special advantages. The two-year commissioning program allows junior college transfer students and other students with two academic years remaining in either undergraduate or graduate status to obtain an Air Force commission while completing their studies. The four-year program provides on-campus study during the freshman through senior years. Both programs offer scholarships for selected students. Such scholarships include full tuition, fees, required text books, and \$100 per month. The Aerospace Studies curriculum is divided into two phases: (1) the General Military Course and (2) the Professional Officer Course. Students are invited to write or visit the Department of Aerospace Studies to obtain additional information.

GENERAL MILITARY COURSE

The General Military Course consists of the freshman and sophomore courses for students in the four-year AFROTC program. These courses form a single unit entitled "U.S. Military Forces in the Contemporary World," and they focus upon elements of power in the modern world, the nature of military power, and the implications and applications of military power. The General Military Course is designed to strengthen the student's interest in becoming a professional Air Force officer, develop his knowledge of world military forces, and enable him to understand how the United States Air Force supports national objectives.

PROFESSIONAL OFFICER COURSE

The Professional Officer Course consists of Aerospace Studies courses offered during the junior and senior years. It must be completed by all students who seek a commission through the Air Force ROTC. Course continuity is designed to prepare selected college students to serve as active duty Air Force officers upon graduation and commissioning. The curriculum stresses the growth and development of aerospace power, the United States space program, leadership, management, and professionalism. Special emphasis is placed on developing the cadet's communicative skills.

CORPS TRAINING

Corps Training is the formalized phase of leadership training conducted both on the drill field and in the classroom. It is scheduled for one hour each week for both the general military and the professional officer courses.

REQUISITES FOR ADMISSION TO THE PROFESSIONAL OFFICER COURSE

1. Be at least 17 years of age at the time of acceptance.
2. Be able to complete the Professional Officer Course and graduate from University prior to reaching age 26 years and 6 months if entering Flight Training or before age 30 if entering non-flying category.
3. Pass the Air Force Officer Qualifying Test and physical examination.
4. For those students enrolled in the four-year AFROTC program, complete the General Military Course or its equivalent, or have acceptable prior military service. Veterans and students with previous ROTC training are invited to write or visit the Department of Aerospace Studies to discuss their status.
5. For those students desiring entry into two-year AFROTC program, complete the application and testing process preferably prior to April 1 of the year preceding the one in which they wish to enroll in the Professional Officers Course; complete a six-week Field Training encampment prior to enrollment in the Professional Officers Course.
6. Selection by the Professor of Aerospace Studies and acceptance by the University.
7. Execute a written agreement with the government to complete the Professional Officer Course and accept an Air Force commission.
8. Enlist in the Air Force Reserve for a period of six years (terminated upon entering Air Force as a commissioned officer).

AIR FORCE ROTC COLLEGE SCHOLARSHIP PROGRAM

The ROTC Vitalization Act of 1964 established military scholarships for selected cadets in the four-year AFROTC program. In 1972, scholarships were extended to selected students entering the two-year AFROTC program. Such scholarships provide for full tuition, fees and required text books. In addition, recipients of these scholarships receive \$100 per month. Recipients of scholarships are nominated by a committee composed of AFROTC officers and university faculty. Final selection is made at AFROTC Headquarters, Maxwell AFB, Alabama. Usually if required standards are maintained, the scholarships continue through the selectee's senior year.

MONETARY ALLOWANCE

Cadets enrolled in the Professional Officer Course receive a monetary allowance of \$100 per month.

SUMMER TRAINING: TWO-YEAR PROGRAM

Students must complete the six-week Field Training course before they can formally enroll in the Professional Officer Course. This course is conducted at an Air Force base. It includes military training, physical conditioning, and a modified version of the General Military Course. Students who complete the six-week Field Training receive approximately \$455.

SUMMER TRAINING: FOUR-YEAR PROGRAM

Cadets enrolled in the four-year AFROTC program are required to attend a four week Field Training course at an Air Force base. Normally, cadets must attend this program at the end of the General Military course. Summer Field Training provides a better understanding of the United States Air Force mission, increases the cadet's proficiency in junior officer training area, and stresses the importance of physical conditioning. Cadets who complete the four-week Field Training course receive approximately \$280.

FLIGHT INSTRUCTION PROGRAM

Cadets in the Professional Officer Course who are qualified for and seek pilot training in the United States Air Force receive thirty-six and one-half clock hours of civilian flight instruction and approximately 40 hours of ground school. This instruction may qualify the cadet for a private pilot's license.

OFFICER COMMISSIONS

Cadets who complete the Professional Officer Course are appointed Second Lieutenants in the United States Air Force Reserve. As reserve officers, they incur an obligated active duty tour of four years (non-flying) or six years (flying). During this period of active service, they are encouraged to and may remain on active duty indefinitely. They are given the opportunity during this period to obtain a regular commission in the United States Air Force.

MAJOR

A student taking the Air Force ROTC program may major in any discipline he desires. A major is not offered by this department. Courses offered by AFROTC may be found under "Course Descriptions" under the prefix AFR.

MAJOR IN ALLIED LEGAL SERVICES

Students in this program offered by the Department of Public Service Administration are trained as para-legal professionals to serve as supplemental staff in law offices and public agencies. It is intended to produce a mature, highly motivated aide capable of moving into the fact gathering, research and compilation phases of legal practice. The graduate would be expected to work under the general direction of an attorney and to be familiar with basic legal procedures and terminology and skilled in the rapid and accurate acquisition, recording, and the reporting of essential data. He also would be expected to undertake interviewing and investigative functions. In addition, it is expected that the instruction received will impart respect for the law and an understanding of its role in our government and society and will produce a graduate of high ethical standards.

The program at present stresses the area of private legal relations, the aspect of the law considered by attorneys to offer the greatest promise for useful paraprofessional contribution to legal practice. The content of the LES courses concentrates on the mutual legal rights and obligations of the parties involved in the respective matters. Other aspects of those relations—e.g., the economic, social or environmental—are covered in the supporting courses offered by other departments and colleges of the University. Successful completion of the program leads to the degree of Bachelor of Arts in Allied Legal Services.

REQUIREMENTS FOR THE MAJOR:

The major in Allied Legal Services requires the completion of at least 180 credits including the Environmental Studies Program and the following:

CORE COURSES (26 quarter hours)

- | | |
|------------|-------------------------------|
| 1. LES 302 | Legal Investigation |
| LES 304 | Law and the Paraprofessional |
| LES 305 | Litigation and Trial Practice |
| LES 342 | Estates and Trusts |
| LES 380 | Real Estate Law |
| BADM 371 | Legal Environment of Business |
| BADM 372 | Business Law |

2. 10 additional hours in LES courses.

3. 12 quarter hours in allied fields, which may include business, accounting, economics, public administration, etc.

TYPICAL PROGRAM FOR ALLIED LEGAL SERVICES

FIRST YEAR

Fall		Winter		Spring	
ENG 101	4	HUM 201	4	CHEM 101	4
SPE 101	3	ENG 103	3	ECON 201	3
BIO 101	4	PCL 201	4	LES 301	4
LES 201	4	STAT 201	4	PSY 201	4
TOTAL	15	TOTAL	15	TOTAL	15

SECOND YEAR

Fall		Winter		Spring	
PHI 205	4	ART 221	3	IEMS 311	4
LES 304	4	LES 302	4	PCL 350	4
PSY 202	4	BADM 371	3	CRJ 302	4
GEOL 100	4	LES 305	4	BADM 373	3
TOTAL	16	TOTAL	14	TOTAL	15

THIRD YEAR

Fall		Winter		Spring	
ACCY 310	5	COM 311	4	BADM 372	3
LES 303	4	FIN 341	4	LES 380	4
EDTA 481	3	LES 342	4	CRJ 301	4
ENG 301	3	ENGR 483	3	PHI 311	4
TOTAL	15	TOTAL	15	TOTAL	15

FOURTH YEAR

Fall		Winter		Spring	
LES 428	4	LES 442	4	ESPE 483	3
CRJ 492	4	BADM 474	3	PCL 475	4
COM 426	4	COM 411	4	LES 492	4
GEOG 350	4	LES 315	4	LES 494	4
TOTAL	16	TOTAL	15	TOTAL	15

MAJOR IN COMMUNICATION

Chairman: *Buchanan*, Bldg HFA 534 B, Phone 275-2681

Faculty: *Arnold, Bennett, Butler, Calonius, Fedler, Hoglin, Ingram, D. Jackson, Johnson, Meeske, Morgan, Mullin, O'Keefe, Pryor, Tanzi, Taylor, Wycoff.*

BACHELOR OF ARTS IN COMMUNICATION

The Department of Communication affords the student an opportunity to concentrate in the areas of communication with emphasis in communicative disorders, journalism, radio-television-film and speech.

A major in communication requires a minimum of 54 hours including COM 301, Communication as a Behavioral Science (4).

Any student contemplating graduate studies should be aware of special requirements in some graduate schools, such as foreign languages, statistics, and computer programming.

An internship program is available to qualified students. This program earns elective credit only and cannot be applied to the major requirement of 54 hours.

Students may select one of the following programs of study to complete the requirements for a major in communication:

EMPHASIS PROGRAM

In the student's overall program in communication, 36-39 quarter hours must be elected in an area of emphasis, whether communicative disorders, journalism, radio-

television-film or speech. In addition, 11-14 quarter hours must be elected within two additional areas in the communication department other than the field selected for emphasis. The following are required courses based upon the emphasis chosen:

COMMUNICATIVE DISORDERS

COM	320	Introduction to Communicative Disorders	4
COM	321	Biolinguistics	4
COM	377	Differential Diagnosis in Communicative Disorders	4
COM	401	Communicative Disorders: Articulation	4
COM	402	Communicative Disorders: Language	4
COM	403	Voice Disorders	4
COM	404	Communicative Disorders: Stuttering	4
COM	405	Clinical Methods in Communicative Disorders	4
COM	445	Basic Audiology	4
COM	450	Aural Habilitation	4
SPE	261	English Phonetics and American Dialects	5
SPE	364	Physical Bases of Speech and Hearing	5

TYPICAL PROGRAM FOR COMMUNICATIVE DISORDERS

FIRST YEAR

Fall		Winter		Spring	
ENG 101	4	ENG 103	3	PCL 201	4
SPE 101	3	MATH 101	4	Science	4
BIOL 100	4	COM 100	4	SPE 261	5
Science	4	HUM 201	4		
		COM 320	4		
TOTAL	15	TOTAL	19	TOTAL	13

SECOND YEAR

Fall		Winter		Spring	
HIST 201	4	PHI, LIT		SPE 364	4
PSY 201	4	HUM	4	COM 401	4
PCL 305	4	PSY 202	4	COM 402	4
EDTA 206	3	COM 301	4	STAT 201	4
		COM 377	4		
TOTAL	15	TOTAL	16	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
PSY 301	5	PSY 304	5	PSY 310	4
COM 403	4	COM 445	4	COM 406	4
COM 404	4	COM 405	4	COM 444	4
SPE 262	3	PHI 221	4	COM 440	3
TOTAL	16	TOTAL	17	TOTAL	15

FOURTH YEAR

Fall		Winter		Spring	
PHYS 107	4	CHEM 111	4	COM 512	4
BADM 301	3	ENGR 486	3	COM 511	5
COM 450	4	COM 451	5	SPE 365	2
COM ELEC	4	SPE 362	4	COM 513	4
TOTAL	15	TOTAL	16	TOTAL	15

FILM:

RTV 355	Foundations of Broadcasting	4
RTV 337	Broadcast Techniques	4
COM/THA 310	History of Motion Picture	4
ART 341	Photography	3
JRN 323	Press Photography I	4
JRN 324	Press Photography II	4
RTV 345	Film For Television	4
RTV 445	Television Film Production	4
RTV 447	Television Film Documentary	4
ART 202	Design Fundamentals II	3
or		
THA 210	Cinema Survey	4

Other recommended courses: ART 204; ART 342; THA 424.

TYPICAL PROGRAM FOR FILM**FIRST YEAR**

Fall		Winter		Spring	
ENG 101	4	COM 100	4	RTV 355	4
PHYS 100	4	PHYS 101	4	RTV 337	4
MATH 111	4	ENG 103	3	JRN 319	5
PSY 201	4	SPE 101	3	JRN 323	4
		MATH 211	4		
TOTAL	16	TOTAL	18	TOTAL	17

SECOND YEAR

Fall		Winter		Spring	
COM 301	4	HUM 201	4	JRN 324	4
STAT 201	4	COM 310	4	COM 411	4
PSY 202	4	RTV 341	4	RTV 342	4
RTV 340	4	THA 210	4	SOC 201	4
TOTAL	16	TOTAL	16	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
HUM	4	PSY 308	4	ED	3
GEOG	4	BADM 301	3	RTV 451	4
ART 341	3	Elective	4	JRN 464	4
RTV 345	4	RTV 450	4	COM 410	4
		COM 420	1	Elective	3
TOTAL	15	TOTAL	16	TOTAL	18

FOURTH YEAR

Fall		Winter		Spring	
RTV 445	4	RTV 447	4	RTV 452	4
RTV 450	4	JRN 331	4	RTV 446	4
ENGR	3	JRN 440	4	COM 429	4
COM 312	4	COM 457	5	Elective	4
TOTAL	15	TOTAL	17	TOTAL	16

JOURNALISM:

Students majoring in journalism may select one of the three sequences for emphasis: news-editorial, advertising or public relations.

Students majoring in journalism are required to take the following courses:

JRN 319	Basic Reporting	4
JRN 321	Copy Editing	4
JRN 322*	Advanced Editing	4
JRN 422*	Public Affairs Reporting	4
JRN 330	History of American Journalism	4
JRN 431	International Communication and the Foreign Press	4
JRN 464	Principles of Advertising	4
COM 411	Legal Responsibilities of the Mass Media	4

In addition, students must take at least two other JRN prefix courses of their choice.

*Students in advertising sequence may substitute JRN 465 (Advertising Media) and JRN 466 (Advertising Copy) for JRN 322 and JRN 422.

TYPICAL PROGRAM FOR JOURNALISM**FIRST YEAR**

Fall		Winter		Spring	
ENG 101	4	SPE 101	3	ENG 103	3
HIST 201	5	HUM 201	4	PSY 201	4
COM 100	4	STAT 201	4	SOC 201	4
MATH 100	4	PCL 201	4	ENG 208	3
TOTAL	17	TOTAL	15	TOTAL	14

SECOND YEAR

Fall		Winter		Spring	
ENG 201	4	RTV 355	4	REL 321	4
BIOL 100	4	BOT 100	4	THA 210	4
PSY 202	4	CRJ 201	4	PHYS 103	4
HUM 311	4	COM 301	4	THA 301	4
TOTAL	16	TOTAL	16	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
JRN 319	5	JRN 321	4	JRN 322	4
COM 411	4	COM 410	4	SOC 331	4
JRN 464	4	BADM 301	3	SOC 346	4
ENGR 483	3	JRN 465	5	PCL 428	4
TOTAL	16	TOTAL	16	TOTAL	16

FOURTH YEAR

Fall		Winter		Spring	
JRN 423	4	JRN 330	4	JRN 431	4
JRN 425	4	JRN 433	4	HIST 472	4
JRN 440	4	COM 427	4	JRN 422	4
EDTA 480	3	JRN 441	4	HIST 473	4
TOTAL	15	TOTAL	16	TOTAL	16

RADIO-TELEVISION:

RTV 355	Foundations of Broadcasting	4
RTV 446	Radio-Television and Society	4
COM 411	Legal Responsibilities of the Mass Media	4
RTV 448	Broadcast Regulations	4
RTV 452	Broadcast Criticism	4

In addition the student must select one of the following courses:

RTV 340	Audio Production	4
RTV 341	Television Production	4
RTV 345	Film for Television	4

Other recommended courses include COM 310, SOC 325, and PSY 308.

**TYPICAL PROGRAM FOR
RADIO-TELEVISION****FIRST YEAR**

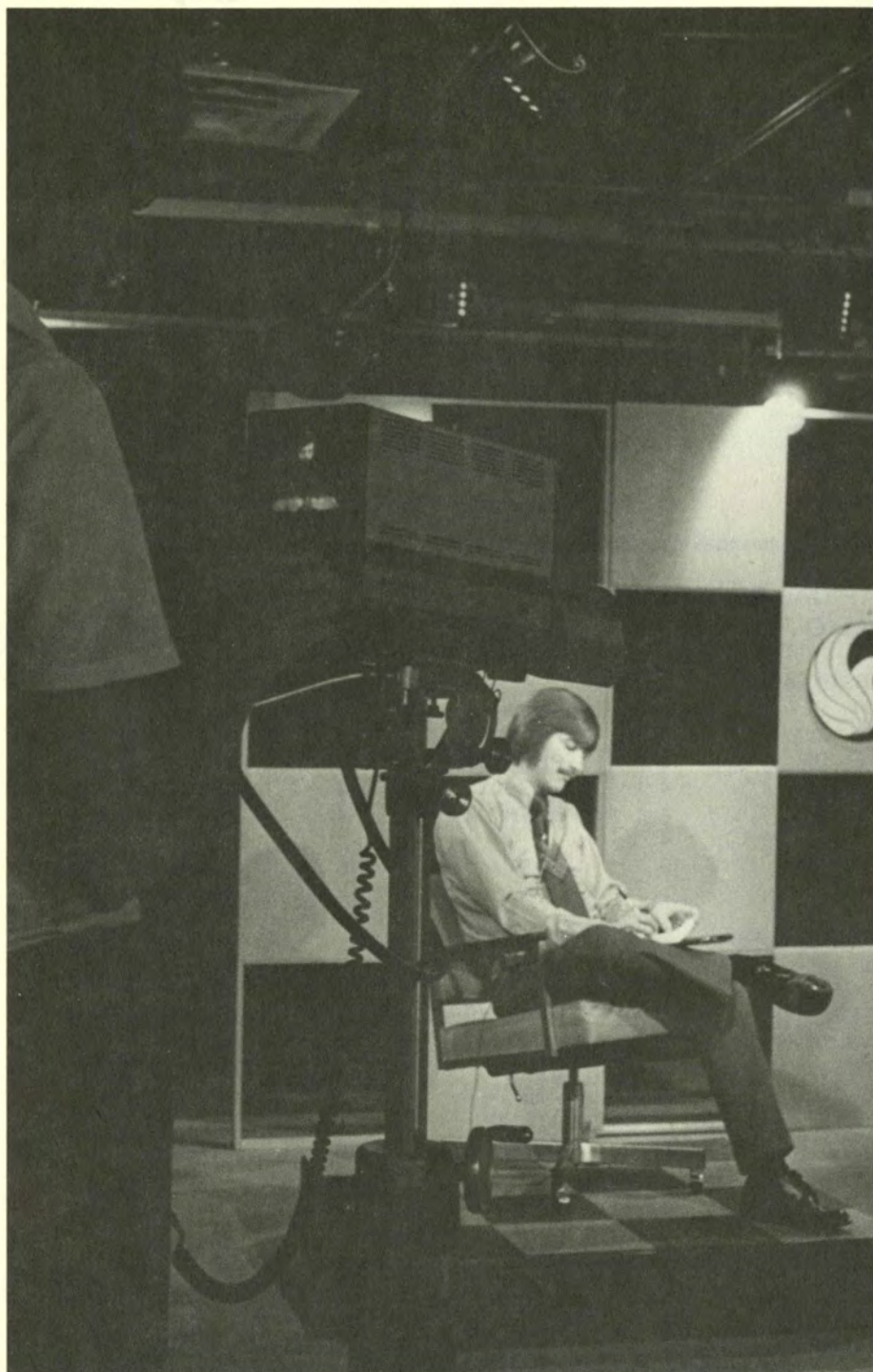
Fall		Winter		Spring	
SPE 101	3	PCL 201	4	RTV 355	4
ENG 102	3	PHYS 101	4	RTV 337	4
PHYS 100	4	ENG 101	3	COM 301	4
MATH 111	4	MATH 211	4	JRN 319	4
PSY 201	4				
TOTAL	18	TOTAL	15	TOTAL	16

SECOND YEAR

Fall		Winter		Spring	
STAT 201	4	SOC 201	4	COMP	4
PSY 202	4	HIST 311	4	RTV 341	4
ENG 103	3	HUM 201	4	COM 411	4
RTV 340	4	RTV 341		SPE 371	3
COM 420	1	or			
		RTV 345	4		
TOTAL	16	TOTAL	16	TOTAL	15

THIRD YEAR

Fall		Winter		Spring	
HUM	4	JRN 330	4	ED	3
GEOG	4	PSY 308	4	RTV 451	4
RTV 346	4	BADM 301	3	JRN 464	4
RTV 342	4	RTV 345	4	COM 410	4
		RTV 420	1		
TOTAL	16	TOTAL	16	TOTAL	15



FOURTH YEAR

Fall		Winter		Spring	
RTV 448	4	RTV 454	4	RTV 458	4
RTV 452	4	RTV 441	4	RTV 453	4
ENGR 48-	3	JRN 440	4	SOC 325	4
COM 312	4	COM 457	4		
COM 420	1				
TOTAL	16	TOTAL	16	TOTAL	12

SPEECH:

SPE 261	English Phonetics and American Dialect	5
SPE 360	Argumentation and Debate	4
COM 363	Group Interaction and Decision-Making	4
SPE 366	Speech Composition	4
SPE 371	Speech and Human Relations	3
SPE 362	Platform Speaking	4

In addition, required hours must be selected from each of the following areas:

Interpersonal and Organizational Communication (3-4 hrs.)

COM 313	Interpersonal Communication	3
COM 312	Leadership Through Oral Communication	4
SPE 361	Persuasion: Motivation	4

Experimental (4 hrs.)

COM 460	Group Dynamics	4
COM 542	Persuasion: Attitude Formation and Change	4
COM 463	Studies in Listening	4

History and Criticism (4-5 hrs.)

COM 568	Evolution of Communication Theory	5
SPE 470	History and Criticism of American Public Address	4
SPE 471	History and Criticism of British Public Address	4
COM 572	Rhetoric of Social and Political Action	4

Students interested in secondary school teaching should refer to the Speech Education Program contained within the College of Education for program information.

TYPICAL PROGRAM FOR SPEECH COMMUNICATION**FIRST YEAR**

Fall		Winter		Spring	
ENG 101	4	ENG 102	3	Science	4
SPE 101	3	Stat	4	SPE 261	5
Math	4	COM 100	4	PCL 201	4
Science	4	Science	4	HUM 201	4
TOTAL	15	TOTAL	15	TOTAL	17

SECOND YEAR

Fall		Winter		Spring	
RTV 355	4	RTV 337	4	HIST 311	4
PSY 201	4	PSY 202	4	PHI, LIT	
PCL 305	4	SPE 360	4	OR HUM	4
THA 230	3	THA 280	4	COM 301	4
				SPE 361	4
TOTAL	15	TOTAL	16	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
EDEL 480		PCL 403	4	COM 363	4
to 482	3	SPE 366	4	SPE 472	4
PCL 308	4	SPE 468	5	JRN 330	4
SPE 371	3	BADM 301	3	PSY 308	4
SPE 362	4				
TOTAL	14	TOTAL	16	TOTAL	16

FOURTH YEAR

Fall		Winter		Spring	
ENGR 481		THA 422	3	PSY 309	
to 489	3	SPE 473	3	COM 410	4
COM 460	4	PSY 333	4	HIST 413	4
THA 380	3	PCL 310	4	RTV 452	4
PSY 307	4				
TOTAL	14	TOTAL	14	TOTAL	16

GENERAL PROGRAM

In the student's overall program in communication 35-36 quarter hours are required. In addition, a minimum of 11-12 hours must be selected within two of the areas in the Communication Department. The following are the required courses:

COMMUNICATION

COM 363	Group Interaction and Decision-Making	4
COM 410	Social Responsibilities of the Mass Media	4
COM 411	Legal Responsibilities of the Mass Media	4
COM 562	Persuasion: Attitude Formation and Change	4

In addition, required hours must be selected from each of the following areas:

History (4)

RTV 355	Foundation of Broadcasting	4
JRN 330	History of American Journalism	4
COM 568	Evolution of Communication	4
SPE 470	History and Criticism of American Public Address	4

Motivation (7-8 Hrs.)

JRN 433	Propaganda and Psychological Warfare	4
JRN 440	Public Relations	4
JRN 464	Principles of Advertising	4
RTV 452	Broadcast Criticism	4
SPE 361	Persuasion-Motivation	4
SPE 371	Speech and Human Relations	3

Research (8 hrs.)

COM 400	Opinion and the Mass Media	4
COM 313	Interpersonal Communication	4
COM 460	Group Dynamics	4
COM 463	Studies in Listening	4

For course descriptions refer to specific areas: Communication, Journalism, Radio-Television, Speech.

The table below illustrates the requirements for a major in communication:

AREAS	Q.H.
Environmental Studies	69
Basic (54)	
Advanced (15)	
Major Area Credits	54
Electives	57
Primarily to be selected from upper level courses outside the Department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

TYPICAL PROGRAM FOR MAJOR IN COMMUNICATION

FIRST YEAR

Fall		Winter		Spring	
ENG 101	4	ENG 103	3	BIOL 100	4
SPE 101	4	MATH 100	4	COMP 101	4
HUM 201	4	PSY 201	4	ECON 202	4
ART 221	3	COM 100	4	PSY 202	4
TOTAL	15	TOTAL	15	TOTAL	16

SECOND YEAR

Fall		Winter		Spring	
HIST 201	4	HIST 202	4	HIST 203	4
BOT 100	4	ENGR 100	4	ECON 203	4
RTV 355	4	ENG 208	3	PSY 300	4
BADM 101	4	JRN 319	5	COM 311	4
TOTAL	16	TOTAL	16	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
JRN 440	4	JRN 464	4	SPE 371	4
COM 301	4	SPE 361	4	JRN 441	4
COM 313	4	ENGR 483	3	JRN 435	4
BADM 301	3	MGMT 301	4	MKTG 301	5
TOTAL	15	TOTAL	15	TOTAL	17

FOURTH YEAR

Fall		Winter		Spring	
COM 410	4	COM 411	4	EDTA 480	3
COM 460	4	COM 462	4	BADM 302	3
MKTG 326	4	HIST 417	4	HUM 372	4
ART 341	3	HUM 371	4	HIST 418	4
TOTAL	15	TOTAL	16	TOTAL	14

MASTER OF ARTS IN COMMUNICATION

The Department of Communication offers a diversified program, individual and flexible, leading to the Master of Arts Degree in Communication. Instruction is offered in mass communication, communication theory and research, informational and educational systems, persuasion, communicative disorders, and other areas drawn from the divisions of Journalism, Radio-Television, and Speech.

Admission to the program will be made on the basis of minimal University requirements, GPA, GRE, three letters of recommendation from undergraduate professors, and the undergraduate transcript.

The graduate student in Communication will be required to take a minimum of 40 quarter hours plus a 6 hour thesis. A grade of "B" or better must be attained in each of the core courses and the student must pass a comprehensive written and oral examination. In addition, the student may be required to demonstrate a proficiency in statistics and computer programming.

The basic core (24 hours) is required of all students in the program.

Basic Core: COM 602, 695, 696, and 12 hours of prescribed courses from communication law, communication systems, small group communication or specific courses approved by the student's committee.

TYPICAL COMMUNICATION GRADUATE PROGRAM

(40 hours plus a 6 hours thesis)

First Quarter (12 hrs.)

COM 602
COM 695
Elective

Second Quarter (12 hrs.)

COM 635
or
COM 615
COM 696
Elective

Third Quarter (12 hrs.)

COM 603
or
COM 630
or
COM 612
COM 620
or
COM 622
Elective

Fourth Quarter (10 hrs.)

Electives
Thesis

MAJOR IN CRIMINAL JUSTICE

Contact Person: *Duffey*, Bldg. AD 136, Phone 275-2603

A professional career in the field of Criminal Justice offers a special challenge in a contemporary society that is dynamic, heterogeneous and mobile, and places a high

value upon individual freedom. Today, more than ever before, the various criminal justice sub-fields offer a special challenge that is both demanding and rewarding.

A criminal justice career enables young men and women to serve their country and their community in an extraordinarily interesting, active and complex field. The program of study is designed to assist the student to attain specific professional career objectives as well as to provide him with a general background in the social and administrative sciences.

The program offers three specific areas of course concentration: law enforcement, corrections, and justice administration. Study options for either service or administrative careers are available in law enforcement or corrections and the justice administration concentration offers study options for either court service work or justice system policy and planning. The satisfactory completion of the curriculum leads to the degree of *Bachelor of Arts in Criminal Justice*.

CRIMINAL JUSTICE

The present major in Criminal Justice requires 75 quarter hours of criminal justice and criminal justice-related course work. This is subdivided as listed below.

1. Criminal Justice Core Courses (required of all majors)
 - CRJ 201 Introduction to Criminal Justice
 - CRJ 302 Administration of Justice
 - CRJ 310 The Correctional and Penal System
 - PAD 350 Public Administration
2. Additional criminal justice courses must be taken in the specific area of concentration to complete a total of 45 hours in criminal justice major.
3. The remainder of the 75 quarter hours (30 hours) must come from the following listing of approved courses for each area of concentration. The college may approve exceptional 30 hours allied programs for students electing to pursue special areas such as the forensic sciences, computer sciences, or some other appropriate and/or related field of study.

Corrections Concentration

CRJ 300	Crime in America
CRJ 301	Criminal Law in Action
CRJ 304	The Police Manager
CRJ 311	Parole and Probation
CRJ 407	Comparative Justice Systems
CRJ 410	Financial Administration and Budgeting
CRJ 411	Justice Policy and Social Conflict
CRJ 422	Delinquency Control
CRJ 423	Corrections Administration

Recommended Allied Field

SOC 325	Urban Sociology
SOC 340	Social Welfare
SOC 344	Sociology of Deviant Behavior
SOC 345	Juvenile Delinquency
SOC 346	Criminology

SOC 347	Sociology of Mental Illness or
PSY 310	Abnormal Psychology
PSY 301	Basic Learning Processes
PSY 321	Principles of Behavior Modification
COM 313	Interpersonal Communication
COM 363	Group Interaction and Decision-making
PCL 300	State Government
PAD 414	Metropolitan Administration
ENG 301	Professional Report Writing
LES 301	Law and Society
AHS 350	Health Law

Law Enforcement Concentration

CRJ 300	Crime in America
CRJ 303	Municipal Police Administration
CRJ 304	The Police Manager
CRJ 400	The Police and the Community
CRJ 410	Financial Administration and Budgeting
CRJ 411	Justice Policy and Social Conflict
CRJ 422	Delinquency Control
CRJ 301	Criminal Law in Action
CRJ 407	Comparative Justice System

Recommended Allied Field

SOC 345	Juvenile Delinquency
SOC 346	Criminology
SOC 352	Race and Ethnic Minorities in the United States
SOC 344	Sociology of Deviant Behavior or
PSY 310	Abnormal Psychology
PSY 308	Social Psychology
COM 311	Business and Professional Communication
COM 313	Interpersonal Communication
PAD 414	Metropolitan Administration
PCL 300	State Government
PAD 440	Comparative Public Administration I
PAD 441	Comparative Public Administration II
PCL 411	Public Policy Administration
PAD 491	Special Topics in Public Administration
ENG 301	Professional Report Writing
LES 301	Law and Society
LES 315	Administrative Law

Justice Administration Concentration

CRJ 300	Crime in America
CRJ 303	Municipal Police Administration
CRJ 304	The Police Manager
CRJ 311	Parole and Probation (Court Service-option)
CRJ 400	Police and the Community
CRJ 407	Comparative Justice Systems
CRJ 410	Financial Administration and Budgeting
CRJ 411	Justice Policy and Social Conflict
CRJ 423	Corrections Administration

CRJ 491	Special Topics in Criminal Justice
CRJ 492	Seminar: Court Administration

Recommended Allied Field

PCL 300	State Government
PCL 413	Metropolitan Politics
PAD 414	Metropolitan Administration
PAD 416	Public Administration Internship
PAD 440	Comparative Public Administration I
PAD 441	Comparative Public Administration II
PCL 417	Policy Problems of Metropolitan Areas
	or
PCL 418	The Politics of Planning for Urban Communities
SOC 335	Social Institutions
COM 400	Opinion and the Mass Media
COM 411	Legal Responsibilities of the Mass Media
PAD 491	Special Topics in Public Administration
LES 301	Law and Society
LES 302	Legal Research and Investigation
LES 304	Law and the Paraprofessional
LES 315	Administrative Law
ENG 301	Professional Report Writing

The Criminal Justice Program offers a limited number of internships and field placements with federal, state and local agencies. Generally such placements are available only to seniors and only during their last two quarters of course work. Students are usually placed with an agency that offers a work experience that matches their area of study concentration.

SUGGESTED PROGRAM IN CRIMINAL JUSTICE

FIRST YEAR

Fall		Winter		Spring	
ENG 101	4	HUM 201	4	CHEM 101	4
SPE 101	3	ENG 103	3	SOC 201	4
BIO 103	4	PCL 201	4	PSY 201	4
CRJ 201	4	STAT 201	4	HIST 201	4
TOTAL	15	TOTAL	15	TOTAL	16

SECOND YEAR

Fall		Winter		Spring	
COMP 101	4	HUM 300	4	PSY 202	4
CRJ 300	4	GEOL 100	4	CRJ 310	4
SOC 202	4	CRJ 302	4	CRJ 301	4
LES 201	4	BADM 371	3	COM 313	4
TOTAL	16	TOTAL	15	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
CRJ 303	4	CRJ 304	4	CRJ 407	4
SOC 345	4	LES 301	4	CRJ 411	4
ENGR 483	3	PAD 350	4	SOC 346	4
PCL 300	4	Elective	3	PCL 411	4
TOTAL	15	TOTAL	15	TOTAL	16

FOURTH YEAR

Fall		Winter		Spring	
CRJ 422	4	COM 411	4	CRJ 491	4
CRJ 400	4	CRJ 410	4	PCL 414	4
ECON 307	3	SOC 335	4	ENG 301	3
BADM 302	3	LES 315	4	CRJ 494	4
EDTA 481	3				
TOTAL	17	TOTAL	16	TOTAL	15

MAJOR IN ECONOMICS

Contact Person: *Dr. J.B. Rollins, Jr.,* Room AD 252, Phone 275-2293

Students majoring in economics in the College of Social Sciences must take ACCY 310, ECON 202, 203, 321, 431, ENG 301, and FIN 331, and 36 hours beyond the Environmental Studies requirements, from the behavioral sciences, mathematics, and the social sciences. The Bachelor or Arts program is designed to permit greater flexibility in course selection to the economics major not planning a career in business.

Although all of the economics courses are offered and administered by the College of Business Administration, they are available to students majoring in economics in either the College of Business Administration or the College of Social Sciences.

Students may select one of the following two programs of study to complete major course requirements for the Bachelor of Arts degree in Economics:

1. General Economics

A. Required:

- ECON 301 Intermediate Price Theory (4)
- ECON 311 Intermediate Money, Income and
Employment Theory (4)

B. Electives:

Six courses in economics not used elsewhere.

2. Quantitative Economics

A. Required:

- ECON 301 Intermediate Price Theory (4)
- ECON 311 Intermediate Money, Income and
Employment Theory (4)
- ECON 371 Mathematical Economics (4)
- ECON 421 Economic Statistical Analysis (5)
- ECON 523 Econometrics (3)

B. Electives:

Three courses in economics not used elsewhere.

The table below illustrates the requirements for a major in Economics:

AREAS

Q.H.

Environmental Studies Program

69

Basic (54)

Advanced (15)

Major Area Credits

95

Electives

16

Primarily to be used from upper level courses outside the Department, with the approval of the student's advisor.

TOTAL QTR. HOURS REQUIRED

180

TYPICAL PROGRAM FOR ECONOMICS (BA DEGREE)

FIRST YEAR

Fall		Winter		Spring	
ENG 101	4	PHIL	4	COMP 101	4
SPE 101	3	HIST	4	BIOL 103	4
PCL 201	4	STAT 301	4	PSY 201	4
HUM 201	4	ENG 301	4	COM 100	4
TOTAL	15	TOTAL	16	TOTAL	16

SECOND YEAR

Fall		Winter		Spring	
SOC 201	4	ECON 202	4	ENGR 481	3
ENGR 100	4	COM 301	4	PSY 301	5
PSY 202	4	EDEL 482	3	SOC 202	4
BADM 301	3	CHEM	4	HUM 335	4
TOTAL	15	TOTAL	15	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
ECON 307	4	ECON 311	4	ECON 321	4
COM 301	4	PSY 301	5	PCL 303	4
ECON 301	4	ACCY 310	5	ECON 431	3
PSL 300	4			PSY 304	4
TOTAL	16	TOTAL	14	TOTAL	15

FOURTH YEAR

Fall		Winter		Spring	
FIN 331	4	Econ Elec	4	Econ Elec	4
Econ Elec	4	COM 311	4	PCL 308	4
Econ Elec	4	Econ Elec	4	Econ Elec	4
SOC 304	4	PSY 308	4		
TOTAL	15	TOTAL	16	TOTAL	12

MAJOR IN POLITICAL SCIENCE

Chairman: Kennedy, Bldg. AD 140, Phone 275-2608

Faculty: Bledsoe, Handberg, Jervy, M. Jones, Lilie, Smyth, Stern, Whisler.

The discipline of political science deals with the elements of man's political behavior: politics, the study of the diverse institutions, procedures and practices relating to political decision-making; and government, the study of the processes by which political decisions are made operational. Political science is thus interdisciplinary in its interest and yet segmentally focused into majors areas of concern.

The major in political science consists of a minimum of 48 quarter hours, including the following courses:

PCL 201	American National Government	4
PCL 302	Scope and Methods of Political Science	
or		
PCL 303	Principles of Political Science	4

A student must also include a minimum of five courses at the 400 level. A portion of the student's remaining elective hours should be taken in such related fields as anthropology, computer science, economics, geography, history, management, mathematics, philosophy, psychology, sociology, or statistics according to the interests of the student and with the concurrence of his advisor.

Although there are no formal language requirements for a political science major, it is strongly recommended that majors planning to continue their education at the graduate level or to pursue a career in international fields acquire a working knowledge of a foreign language.

Prerequisite for political science majors for all courses numbered 300 or above is PCL 201. For non-majors there are no prerequisites except permission of the instructor.

The following areas of concentration are provided to guide majors in Political Science in course selection.

American Institutions and Public Policy

PCL 305	Political Parties
PCL 306	Interest Groups and Political Movements
PCL 308	American Presidency
PCL 310	Congress and the Legislative Process
PCL 315	Public Opinion
PCL 316	Electoral Behavior
PCL 424	Political Sociology
PCL 425	Political Party Behavior
PCL 450	American Public Policy
PCL 471	American Constitutional Law
PCL 473	American Constitutional Law
PCL 475	Judicial Behavior
PCL 490	Series

International Politics

PCL 321	International Relations
PCL 323	Contemporary International Politics
PCL 348	Politics of Mexico, Central America and the Caribbean
PCL 349	Politics of South America
PCL 420	Contemporary International Politics of Asia
PCL 421	International Politics of the Middle East
PCL 422	Inter-American Politics and Organizations
PCL 427	American Foreign Policy
PCL 428	American Defense Policy
PCL 430	International Organizations
PCL 432	International Law I
PCL 433	International Law II
PCL 435	Coercion in International Politics
PCL 490	Series

Comparative Politics

PCL 322	World Political Geography (Same as GEOG 360)
PCL 341	Comparative European Politics
PCL 342	Nationalism
PCL 343	Politics of Developing Areas
PCL 344	Comparative Asian Politics
PCL 348	Politics of Mexico, Central America and the Caribbean
PCL 349	Politics of South America
PCL 442	Government and Politics of Great Britain
PCL 443	Government and Politics of the Soviet Union
PCL 444	Government and Politics of China
PCL 447	Comparative Political Culture and Socialization
PCL 490	Series

Political Theory and Methodology

PCL 316	Electoral Behavior
PCL 360	American Political Philosophy
PCL 403	Political Behavior
PCL 405	Political Theory
PCL 406	Contemporary Democratic Theory
PCL 461	Political Philosophy
PCL 462	Political Philosophy
PCL 463	Political Philosophy
PCL 490	Series

State and Metropolitan Government and Politics

PCL 300	State Government
PCL 306	Interest Groups and Political Movements
PCL 312	Minorities in American Presidency
PCL 413	Metropolitan Politics
PCL 417	Policy Problems of Metropolitan Areas
PCL 418	The Politics of Planning for Urban Communities
PCL 510	Administrative Problems of Metropolitan Areas

TYPICAL PROGRAM FOR POLITICAL SCIENCE

FIRST YEAR

Fall		Winter		Spring	
PCL 201	4	HUM 201	4	PHIL 205	4
SPE 101	3	ENG 103	3	GEOG 360	4
ENG 101	4	PCL 341	4	PCL 303	4
PHYS 100	4	ZOOL 100	4	PSY 201	4
TOTAL	15	TOTAL	15	TOTAL	16

SECOND YEAR

Fall		Winter		Spring	
ECON 201	3	HIST 312	4	BADM 301	3
COMP 101	4	BIO 100	4	PCL 321	4
SOC 201	4	PCL 302	4	SOC 353	4
PCL 308	4	SOC 352	4	HIST 313	4
TOTAL	15	TOTAL	16	TOTAL	15

THIRD YEAR

Fall		Winter		Spring	
ENGR 480	3	PCL 342	4	PCL 447	4
EDTA 480	3	PCL 435	4	PCL 461	4
PCL 428	4	SOC 354	4	SOC 451	4
ENG 301	3	HIST 320	4	PSY 308	4
PSY 202	4				
TOTAL	17	TOTAL	16	TOTAL	16

FOURTH YEAR

Fall		Winter		Spring	
PCL 442	4	PCL 471	4	PCL 427	4
COM 310	4	Elective	4	Elective	4
Elective	4	Elective	4	Elective	4
Elective	4	Elective	3		
TOTAL	16	TOTAL	15	TOTAL	12

PRE-LAW — POLITICAL SCIENCE

While no specific major is prescribed for admission to law school, many pre-law students do elect to major in political science. These students will be required to complete the department's requirements for the degree Political Science/Pre-Law, including a core program comprising:

PCL 201	American National Government	4
PCL 302	Scope and Methods of Political Science	
or		
PCL 303	Principles of Political Science	4
PCL 471, 473, 432, 433	Any one	4
PCL 475	Judicial Behavior	4
	TOTAL	16

The table below illustrates the requirements for a major in Political Science:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced(15)	
Major Area Credits	48
Electives	63
Primarily to be selected from upper level courses outside the Department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

**TYPICAL PROGRAM FOR
PRE-LAW****FIRST YEAR**

Fall		Winter		Spring	
PCL 201	4	HUM 201	4	PHIL 205	4
SPE 101	3	ENG 103	3	GEOG 360	4
ENG 101	4	PCL 341	4	PCL 303	4
PHYS 100	4	ZOOL 100	4	PSY 201	4
TOTAL	15	TOTAL	15	TOTAL	16

SECOND YEAR

Fall		Winter		Spring	
ECON 202	4	HIST 312	4	BADM 301	3
COMP 101	4	BIO 100	4	PCL 310	4
SOC 201	4	PCL 308	4	SOC 353	4
PCL 305	4	SOC 352	4	HIST 313	4
TOTAL	16	TOTAL	16	TOTAL	15

THIRD YEAR

Fall		Winter		Spring	
ENGR 480	3	PCL 461	4	PCL 462	4
EDTA 480	3	PCL 473	4	PCL 475	4
PCL 471	4	SOC 354	4	SOC 451	4
ENG 301	3	HIST 320	4	PSY 308	4
PSY 202	4				
TOTAL	17	TOTAL	16	TOTAL	16

FOURTH YEAR

Fall		Winter		Spring	
PCL 463	4	PCL 450	4	PCL 442	4
COM 310	4	Elective	4	Elective	4
Elective	4	Elective	4	Elective	4
Elective	4	Elective	3		
TOTAL	16	TOTAL	15	TOTAL	12

Public Administration

Contact Person: *Dr. W.W. Young*, Room AD 138, Phone 275-2608

Students considering careers in public service at the federal, state or local level may choose to enroll in the Public Administration program offered by the Department of Public Service Administration. The Public Administration program has been strengthened by the addition of relevant courses from these related concentrations — Criminal Justice and Allied Legal Services. Its internship option offers qualified students a significant opportunity to acquire practical experience in government while completing their undergraduate curricula.

The major in Public Administration requires the completion of 48 quarter hours of approved courses—36 in the core courses, and at least 12 quarter hours of electives in Public Service.

Core Courses

PCL 201	American National Government
PCL 350	Introduction to Public Administration
PAD 411	Public Policy Administration
PAD 414	Metropolitan Administration
CRJ 304	The Police Managers
CRJ 410	Financial Administration and Budgeting
CRJ 491	Special Topics
PAD/CRJ 494	Independent Study
LES 315	Administrative Law

TYPICAL PROGRAM FOR PUBLIC ADMINISTRATION

FIRST YEAR

Fall		Winter		Spring	
PCL 201	4	SPE 101	3	PAD 350	4
CRJ 201	4	PHI 205	4	MATH 104	4
ENG 101	4	ENG 103	3	STAT 201	4
HUM 201	3	HIST 311	4	SOC 201	4
TOTAL	15	TOTAL	14	TOTAL	16

SECOND YEAR

Fall		Winter		Spring	
GEOL 100	4	ECON 203	4	PSY 202	4
BIOL 103	4	BADM 371	3	ENGR 485	3
PSY 201	4	HIST 313	4	CRJ 304	4
ECON 202	4	GEOL 201	4	PCL 312	4
HIST 312	4	BIOL 105	4		
TOTAL	20	TOTAL	19	TOTAL	15

THIRD YEAR

Fall		Winter		Spring	
EDEL 482	3	PAD 411	4	PAD 414	4
COM 311	4	PSY 307	4	PCL 315	4
GEO 350	4	CRJ 410	4	CRJ 491	4
PCL 315	4	PCL 413	4	PAD 441	4
TOTAL	15	TOTAL	16	TOTAL	16

FOURTH YEAR

Fall		Winter		Spring	
COM 312	4	SPE 361	4	SPE 366	4
PSY 314	4	PSY 321	4	COM 421	4
PAD 491	4	COM 313	4	COM 363	4
SPE 360	4	PAD 492	4	PCL/CRJ 494	4
TOTAL	16	TOTAL	16	TOTAL	16

MASTER OF PUBLIC POLICY

The Master of Public Policy degree offers a flexible course of study which prepares students for positions as policy analysts and administrators in various modes of public service. The interdisciplinary nature of the program provides the opportunity to acquire knowledge, master techniques, and develop insights essential for the design, analysis, and effectuation of policy programs at all levels of government.

Two concentration areas are available. The "Politics of Policy Making" is primarily for students who are interested in the institutions, processes, and behaviors of the political system and the environment in which policy decisions are made. The "Bureaucracy and Public Policy" focuses primarily upon the implementation and administration of policy decisions.

Regular admission to the program will be made on the basis of the student's undergraduate transcripts, the Graduate Record Exam, and three letters of recommen-

dation from persons capable of assessing the applicant's ability to undertake graduate work. An applicant must submit Graduate Record Exam Scores (Verbal and Quantitative) and transcripts of all colleges attended in order to be considered for regular graduate status.

The Master of Public Policy Program requires a minimum of 50 quarter hours of graduate course work, including six hours credit for an internship or investigatory research project that results in an acceptable research report. Course work beyond the 50 hours may be prescribed by the student's committee. There is no foreign language requirement.

An average of 3.0 ("B") must be maintained for all courses in the student's program of study. No more than 9 hours of "C" may be counted in the degree program. Exceeding a combined 9 hours of "C" or unresolved "I" grades in a specified program of study is reason for dismissal from graduate status.

A maximum of 12 quarter hours of graduate credit may be evaluated for possible transfer into the degree program. The 12 hour total applies to any combination of graduate credit from other universities and from post-baccalaureate work at FTU.

The student must perform satisfactorily on a written comprehensive examination designed to test his knowledge and abilities in the core concentration area selected. Normally, this exam will not be administered until at least 40 hours of graduate work have been completed. In addition, the student's committee will administer an oral examination following completion of the student's research report.

All students in the MPP Program are required to complete the following core:

- PCL 600 Public Policy and Political Analysis
- PCL 602 Methodology
- PCL 605 Bureaucracy and Public Policy
- PCL 601 Public Policy and Political Research
- or
- PCL 611 Planning & Organization for Economic & Social Development



1 course in Policy Issues — PCL 670, 672, 673, 675, 676, or 677

1 course in statistics

PCL 698 Research Report — 6 hours

A student may select other graduate courses from a wide variety of offerings throughout the university if those electives have the approval of the student's graduate committee.

The Master of Public Policy degree may be earned by employed students through enrollment in evening classes. The time required to complete the requirements for the degree will vary with the individual. Courses completed more than five years prior to the quarter in which the degree is earned may not be used toward meeting degree requirements.

MAJOR IN PSYCHOLOGY

Chairman: *Abbott*, Bldg. LR Suite 115, Phone 275-2216

Faculty: *Blau, Brophy, Burr, Burroughs, Drabman, Fisher, Frank, Jaffee, McGuire, O'Hara, Rollins, Shirkey, Smith, Tell, Thomas, Tucker, Van Twyver.*

BACHELOR OF ARTS IN PSYCHOLOGY

The major in psychology consists of 56 quarter hours of psychology as shown below:

I. Introductory Areas (10 quarter hours)

PSY 201	General Psychology	4
PSY 202	General Psychology	4
PSY 316	Careers in Psychology	2

II. Foundation Areas (26 quarter hours)

Group A (all three required)

PSY 301	Basic Learning Processes	5
PSY 303	Physiological Psychology	5
PSY 495	Research Methods	4

Group B (two courses from the four)

PSY 308	Social Psychology	4
PSY 309	Personality Theory	4
PSY 310	Abnormal Psychology	4
PSY 313	Developmental Psychology	4

Group C (one of the two)

PSY 305	Psychological Measurement	4
PSY 411	Statistical Methods in Psychology	4

III. Concentration Elective (20 hours)

The remaining 20 quarter hours of psychology may be taken according to the student's interests and career goals and with the consent of his advisor. The typical programs shown below are intended to aid in this selection.

TYPICAL PROGRAMS IN PSYCHOLOGY

The following groupings of courses are important to include within the 56 psychology hours for the interest area or career goal indicated.

I. Industrial Psychology

PSY 305	Psychological Measurement
PSY 308	Social Psychology
PSY 309	Personality Theory
PSY 314	Industrial Psychology
PSY 321	Principles of Behavior Modification
PSY 340	Environmental Psychology
PSY 353	Psychology of Racial Prejudice
PSY 371	Interviewing and Counseling
PSY 411	Statistical Methods in Psychology

II. Exceptional Populations

PSY 305	Psychological Measurement
PSY 306	Psychology of Adjustment
PSY 309	Personality Theory
PSY 310	Abnormal Psychology
PSY 313	Developmental Psychology
PSY 321	Principles of Behavior Modification
PSY 371	Psychology of Exceptional Children
PSY 353	Psychology of Racial Prejudice
PSY 415	Individual Intelligence Testing
PSY 372	Mental Retardation
PSY 390	Undergraduate Field Work
PSY 370	Interviewing and Counseling

III. Educational/Counseling

PSY 309	Personality Theory
PSY 313	Developmental Psychology
PSY 321	Principles of Behavior Modification (Strongly recommended to be taken early in concentration)
PSY 343	Educational Psychology
PSY 371	Psychology of Exceptional Children
PSY 370	Interviewing and Counseling
PSY 390	Undergraduate Field Work (Recommended to be taken during senior year)

Other courses pertinent to the area:

PSY 330	Psychology of Women
PSY 306	Psychology of Adjustment
PSY 373	Counseling By-Passed Population
PSY 353	Psychology of Racial Prejudice
PSY 415	Individual Intelligence Testing
PSY 315	Drugs and Behavior

Students interested in public school guidance counseling will need to obtain Professional Preparation in Education in addition to graduate training in guidance/counseling.

IV. Community Services

PSY 309	Personality Theory
PSY 310	Abnormal Psychology
PSY 305	Psychological Measurement
PSY 312	Clinical Psychology
PSY 321	Principles of Behavior Modification
PSY 415	Individual Intelligence Testing
PSY 315	Drugs & Behavior
PSY 370	Interviewing & Counseling
PSY 390	Undergraduate Field Work
PSY 313	Developmental Psychology

Other courses pertinent to the area:

PSY 306	Psychology of Adjustment
PSY 330	Psychology of Women
PSY 373	Counseling By-Passed Populations
PSY 353	Racial Prejudice
PSY 343	Educational Psychology
PSY 371	Exceptional Child
PSY 372	Mental Retardation

STUDENTS PLANNING ADVANCED TRAINING IN PSYCHOLOGY

Most graduate schools require a sound background in research methodology and statistics in addition to a thorough knowledge of the traditional "central" topics of psychology. As graduate admission becomes more competitive it is also extremely important to obtain actual on-the-job training such as a field work agency placement and undergraduate research association with one of the department faculty members. It is, therefore, suggested that the following courses be included in your curriculum, regardless of your particular area of interest.

PSY 321	Principles of Behavior Modification
PSY 390	Undergraduate Field Work
PSY 405	History and Systems of Psychology
PSY 411	Statistical Methods in Psychology
PSY 497	Research

The following courses are also suggested:

PSY 304	Perception
PSY 307	Motivation
PSY 308	Social Psychology
PSY 309	Personality Theory
PSY 310	Abnormal Psychology
PSY 313	Developmental Psychology

MASTER OF SCIENCE IN PSYCHOLOGY

The Master's program in Psychology currently emphasizes training in both Industrial and Community Psychology. Both programs should require two years of full-time attendance to complete and are designed to prepare students for positions as master's level psychologists working in industrial settings or community agencies.

Emphasis in both programs is on an individual's being prepared for an applied position at the completion of the program.

Admission to the program will be made on the basis of the undergraduate transcripts, Graduate Record Examination, three letters of recommendation and a student's interest in pursuing a career at the master's level in psychology.

The degree in Community Psychology provides for a concentration in either Clinical or School applications. Both concentrations require the completion of approximately 65 quarter hours including a Master's Requirement (Project, Speciality Paper, or Thesis), an oral defense of the Master's Requirement and an internship. A qualifying examination covering all course content areas will be administered at the end of the fourth quarter in the program. The School concentration includes course work enabling the student to meet Florida State Certification Requirements as a Specialist in School Psychology.

The program in Industrial Psychology requires 65 quarter hours including a quantitative research thesis. Three major exams are required in this program: A qualifying examination administered at the end of a student's first year and covering general psychology, a comprehensive examination administered at the end of the student's second year and covering all applied areas of the program, and a final oral examination in defense of thesis or master's project. The qualifying, comprehensive, and final oral examinations may not be taken more than two times each.

MAJOR IN PUBLIC SERVICE ADMINISTRATION

Chairman: *Young*, Bldg. AD138, Phone 275-2603

Faculty: *Duffey, Holten, R. Jones, Korstad*

The Department of Public Service Administration incorporates three related programs: Public Administration, Criminal Justice and Allied Legal Services. These programs share a common concern with the institutions and processes by which political and social decisions are made operational, and a common goal of preparing students to assume duties and responsibilities as professionals dedicated to service of the public.

MAJOR IN SOCIOLOGY

Chairman: *Unkovic*, Lib. 117, Phone 275-2227

Faculty: *Allen, Austin, Brown, Dees, Hodgin, Jones, Miller, Tropf, Ward, Williams, Wright*

The Department of Sociology offers the student an opportunity to obtain a Bachelor of Arts in sociology with a concentration in general sociology, social work, or anthropology.

Although a foreign language is not required for a sociology major, students planning to continue their education at the graduate level are strongly urged to acquire a working knowledge of a foreign language.

GENERAL SOCIOLOGY

The table illustrates the requirements for a student with a concentration in General Sociology:

AREAS	Q.H.
Environmental Studies Programs	69
Basic (54)	
Advanced (15)	
Major Area Credits	56
Electives	55
Primarily to be selected from upper level courses outside the department, with the approval of the student's advisor.	
TOTAL QTR. HOURS REQUIRED	180

A major in general sociology consists of a minimum of 56 quarter hours, which includes the following **required** courses:

SOC 201	General Sociology	4
SOC 202	General Sociology	4
SOC 304	Development of Social Thought	
	or	
SOC 306	Modern Social Thought	4
SOC 310	Introductory Anthropology (Physical)	
	or	
SOC 311	Introductory Anthropology (Cultural)	4
SOC 495	Undergraduate Research Methods	4
SOC 497	Research	4
STAT 201	Principles of Statistics	4
		TOTAL 28

The remaining 28 quarter hours required in sociology may be selected according to the interests of the student and with the agreement of the advisor.

The following sequences are offered only as a guide for aiding students to pursue specialized interests and goals:

Family

SOC 349	Human Growth and Development
SOC 354	Sociology of Adolescence
SOC 406	Sociology of Aging
SOC 407	The Family

Research

SOC 494	Independent Study
SOC 495	Undergraduate Research Methods
SOC 497	Research
STAT 201	Principles of Statistics

Social Change

SOC 360	Social Change
SOC 362	Contemporary Women in Society
SOC 408	Social Change in Developing Areas
SOC 451	Contemporary Social Movements

Social Deviance

SOC 331	Social Problems
SOC 344	Sociology of Deviant Behavior
SOC 345	Juvenile Delinquency
SOC 346	Criminology
SOC 347	Sociology of Mental Illness
SOC 348	Sociology of Alcoholism
SOC 452	Sociology of Drug Abuse

Social Organization

SOC 316	Comparative Social Organization
SOC 320	Collective Behavior
SOC 336	Social Stratification

Social Psychology

SOC 353	Culture and Personality
SOC 401	Individuals in Society
PSY 308	Social Psychology

Theory

SOC 304	Development of Social Thought
SOC 306	Modern Social Thought

**TYPICAL PROGRAM FOR
GENERAL SOCIOLOGY****First Year**

Fall		Winter		Spring	
SOC 201	4	HIST 201	4	MATH 100	4
ENG 101	4	SOC 202	4	ECON 202	4
BIOL 103	4	BIOL 105	4	GEOL 100	4
SPE 101	3	HUM 201	4	HIST 102	4
TOTAL	15	TOTAL	16	TOTAL	16

Second Year

Fall		Winter		Spring	
STAT 201	4	SOC 310	4	SOC 306	4
HIST 103	4	COMP 101	4	SOC 311	4
PSY 201	4	SOC 304	4	PSY 308	4
SOC 331	4	PSY 202	4	PCL 302	4
TOTAL	16	TOTAL	16	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
ART 322	3	HIST 313	4	HIST 324	4
ECON 307	3	COM 301	4	SOC 325	4
SOC 307	4	SOC 317	4	SOC 335	4
SOC 316	4	SOC 320	4	SOC 336	4
TOTAL	14	TOTAL	16	TOTAL	16

FOURTH YEAR

Fall		Winter		Spring	
HUM 415	4	ENGR 481	3	EDEL 482	3
SOC 495	4	SOC 407	4	ENG 471	3
SOC 360	4	SOC 411	4	SOC 497	4
SOC 401	4	ENG 371	3	PCL 303	4
TOTAL	16	TOTAL	14	TOTAL	14

ANTHROPOLOGY

The table below illustrates the requirements for an anthropology concentration within the Sociology Department:

AREAS	Q.H.
Environmental Studies Program	69
Basic (54)	
Advanced (15)	
Major Area Credits	56
Electives	55
TOTAL QTR. HOURS REQUIRED	180

A concentration in anthropology consists of 56 quarter hours in the major area which includes the following **required** courses:

SOC 201	General Sociology	4
SOC 304	Development of Social Thought	
	or	
SOC 306	Modern Social Thought	4
SOC 310	Introductory Anthropology (Physical)	4
SOC 311	Introductory Anthropology (Cultural)	4
SOC 315	Physical Anthropology	4
SOC 316	Comparative Social Organization	4
SOC 402	Method and Theory in Anthropology	4
SOC 495	Research Methods	4
SOC 497	Research	4
STAT 201	Principles of Statistics	4
TOTAL		40

The remaining 16 quarter hours are to be taken from the areas listed below (Min. of one course in each area.)

"Area Courses" (min. of 1 each area):

Linguistics

ENG 371	Principles of Linguistics	3
SOC 403	Anthropological Linguistics	4

Archaeology

SOC 312	Old World Prehistory	4
SOC 313	New World Prehistory	4
SOC 314	Field and Lab. Tech. Arch.	4

Ethnology

SOC 308	Ethnol. N. American Indians	4
SOC 309	Plains Indians of N. America	4
SOC 317	Comp. Cult.: Africa	4

Specialized Studies

SOC 307	Sociology of Religion	4
SOC 353	Cult. & Personality	4
SOC 402	Method & Theory in Anthropology	4

TYPICAL PROGRAM FOR ANTHROPOLOGY

FIRST YEAR

Fall		Winter		Spring	
ENG 101	4	SPE 101	3	SOC 201	4
HUM 201	4	HIST 201	4	MATH 100	4
BIOL 110	4	BIOL 105	4	ECON 202	4
SOC 310	4	SOC 311	4	HIST 202	4
TOTAL	16	TOTAL	15	TOTAL	16

SECOND YEAR

Fall		Winter		Spring	
HIST 203	4	STAT 201	4	PSY 411	4
GEOL 100	4	PSY 201	4	PSY 202	4
COMP 101	4	COMP 102	3	ECON 307	3
SOC 308	4	SOC 309	4	BOT 100	4
				SOC 312	4
TOTAL	16	TOTAL	15	TOTAL	19

THIRD YEAR

Fall		Winter		Spring	
PSY 308	4	ENG 371	3	SOC 403	4
BIOL 350	4	BIOL 360	4	SOC 416	4
SOC 353	4	BOT 371	3	HUM 318	4
SOC 316	4	SOC 315	4	ZOOL 324	5
		ENG 301	3		
TOTAL	16	TOTAL	17	TOTAL	17

FOURTH YEAR

Fall		Winter		Spring	
EDEL 482	3	ZOOL 453	3	ENGR 488	3
ART 321	3	SOC 402	4	HUM 315	4
SOC 304	4	SOC 313	4	SOC 314	4
SOC 495	4	SOC 307	4	SOC 317	4
TOTAL	14	TOTAL	15	TOTAL	15

SOCIAL WORK

The table below illustrates the requirements for students with a concentration in social work within the Department of Sociology:

AREAS

Environmental Studies Program
Basic (54)
Advanced(15)

Q.H.
69

Major Area Credits	71
Electives	40
TOTAL QTR. HOURS REQUIRED	180

A concentration in social work consists of 71 quarter hours, which includes the following **required** courses:

SOC 201	General Sociology	4
SOC 202	General Sociology	4
SOC 304	Development of Social Thought	
	or	
SOC 306	Modern Social Thought	4
SOC 310	Introductory Anthropology (Physical)	
	or	
SOC 311	Introductory Anthropology (Cultural)	4
SOC 340	Social Welfare: A Social Institution	4
SOC 341	Social Work: Principles and Methods	4
SOC 342	Government and Social Welfare	4
SOC 343	The Community and Social Welfare	4
SOC 349	Human Growth and Development	4
SOC 350	Interviewing in Social Work Practice	4
SOC 412	Field Experience and Seminar	15
SOC 494	Independent Study	4
SOC 495	Research Methods	4
SOC 497	Research	4
STAT 201	Principles of Statistics	4
		TOTAL 71

TYPICAL PROGRAM FOR SOCIAL WORK

FIRST YEAR

Fall		Winter		Spring	
ENG 101	4	BIOL 103	4	ENG 103	3
HUM 201	4	SPE 101	3	HIST 201	4
SOC 201	4	SOC 202	4	BIOL 105	4
MATH 100	4	PHIL 205	4	PSY 201	4
TOTAL	16	TOTAL	15	TOTAL	15

SECOND YEAR

Fall		Winter		Spring	
PCL 201	4	SOC 311	4	SOC 340	4
ENG 201	4	HIST 311	4	SOC 304	4
GEOL 100	4	PSY 306	4	PSY 309	4
PSY 202	4	SOC 331	4	PCL 303	4
TOTAL	16	TOTAL	16	TOTAL	16

THIRD YEAR

Fall		Winter		Spring	
SOC 341	4	SOC 342	4	SOC 343	4
ECON 202	4	STAT 201	4	SOC 497	4
PCL 350	4	ENG 301	3	PSY 310	4
SOC 407	4	SOC 495	4	ECON 307	3
TOTAL	16	TOTAL	15	TOTAL	15

FOURTH YEAR

Fall		Winter		Spring	
SOC 349	4	SOC 350	4	SOC 412	15
SOC 494	4	EDEL 482	3		
ENGR 482	3	SOC 345	4		
HIST 324	4	SOC 401	4		
TOTAL	15	TOTAL	15	TOTAL	15

MAJOR IN SOCIAL SCIENCES

Contact Person: Dr. J.B. Rollins, Jr., Room AD 252, Phone 275-2293

This unique program offers students an opportunity to become acquainted with the various fields of Social Sciences, and to better understand the relationships between those fields. Satisfactory completion of the program leads to the degree *Bachelor of Science in Social Sciences*.

The program represents an inter-disciplinary approach to the study of Social Sciences. Students are required to fulfill the University's general course requirements plus a minimum of 22 hours in each of four Social Science disciplines: Communication, Economics, Political Science/Criminal Justice, Psychology, or Sociology. In addition, students must take one of the Social Science methodology courses: PCL 302 (Scope and Methods of Political Science), PSY 495 (Research Methods) or SOC 495 (Research Methods).

AREAS OF STUDY

In each of the Social Science areas, there are certain required courses for students choosing these areas. Following are the required courses for each discipline.

COMMUNICATION

COM 100	Basic Communication
COM 301	Communication as a Behavioral Science

ECONOMICS

ECON 202	Principles of Microeconomics
ECON 203	Introduction to Aggregate Economics

POLITICAL SCIENCE/CRIMINAL JUSTICE

PCL 201	American National Government
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PSYCHOLOGY

PSY 201	General Psychology
PSY 202	General Psychology
PSY 309	Personality Theory

SOCIOLOGY

SOC 201	General Sociology
SOC 202	General Sociology

**TYPICAL PROGRAM FOR
B.S. SOCIAL SCIENCES**
FIRST YEAR

Fall		Winter		Spring	
ENG 101	4	PHIL	4	COMP 101	4
SPE 101	3	HIST	4	BIOL 103	4
ENG 103	3	STAT 301	4	PSY 201	4
HUM 201	4	PCL 201	4	COM 100	4
TOTAL	14	TOTAL	16	TOTAL	16

SECOND YEAR

Fall

SOC 201	4
ENGR 100	4
PSY 202	4
BADM 301	3
TOTAL	15

Winter

ECON 202	4
COM 301	4
EDEL 482	3
CHEM	4
TOTAL	15

Spring

ENGR 481	3
PSY 301	5
SOC 202	4
HUM 335	4
TOTAL	16

THIRD YEAR

Fall

BIOL 363	4
COM 311	4
PSY 303	4
PCL 300	4
TOTAL	16

Winter

PSY 304	4
PSY 495	4
COM 312	4
PCL 303	4
TOTAL	16

Spring

PCL 305	4
COM 313	4
PSY 308	4
SOC 304	4
TOTAL	16

FOURTH YEAR

Fall

COM 363	4
PSY 306	4
SOC 310	4
SOC 325	4
TOTAL	16

Winter

COM 400	4
PCL 308	4
PSY 308	4
SOC 311	4
TOTAL	16

Spring

PCL 310	4
SOC 315	4
SOC 331	4
TOTAL	12



COURSE DESCRIPTIONS

CLASSIFICATION OF COURSES

The University course numbering system is as follows:

- 100-299 are freshman and sophomore level courses and are designed primarily for these students.
- 300-499 are junior and senior level courses and are designed primarily for these and other advanced students. When approved for inclusion in an individual program of graduate study by a supervisory committee approved by the Dean of Graduate Studies, selected 400-499 courses may serve the needs of individual graduate students.
- 500-599 are *beginning graduate and advanced undergraduate* level courses — open to graduate students and those seniors who receive approval of the appropriate Dean(s).
- 600-699 are *beginning graduate and professional* level courses open only to graduate students.

SPECIAL COURSES

In addition to the regular courses listed in this bulletin, the following special courses may be available. Consult your academic advisor for details.

	Undergraduates		Special Grad ¹	Grad & Prof
	300	400	500	600
Special Topics	391	491	591	691
Seminar	392	492	592	692
Special Readings	393	493	593	693
Independent Study	394	494	594	694
Research Methods		495	595	695
Research Planning		496	596	696
Research		497	597	697
Research Report		498	598	698
Thesis		499		699

These courses may be assigned variable credit. Some may be repeated upon approval.

¹The Special Graduate Courses are primarily for graduate students, but may be taken by advanced seniors with the consent of their deans.

PR: PREREQUISITE

A course in which credit must be earned prior to enrollment in the listed course.

CR: COREQUISITE

A course which must be taken concurrently with or prior to the listed course.

CI: CONSENT OF INSTRUCTOR

HOURS CODE

Each course listing is followed by a code which shows hours credit, contact hours, and quarters during which the course will normally be offered.

Example:

GEOL 201

4 (2, 4) W

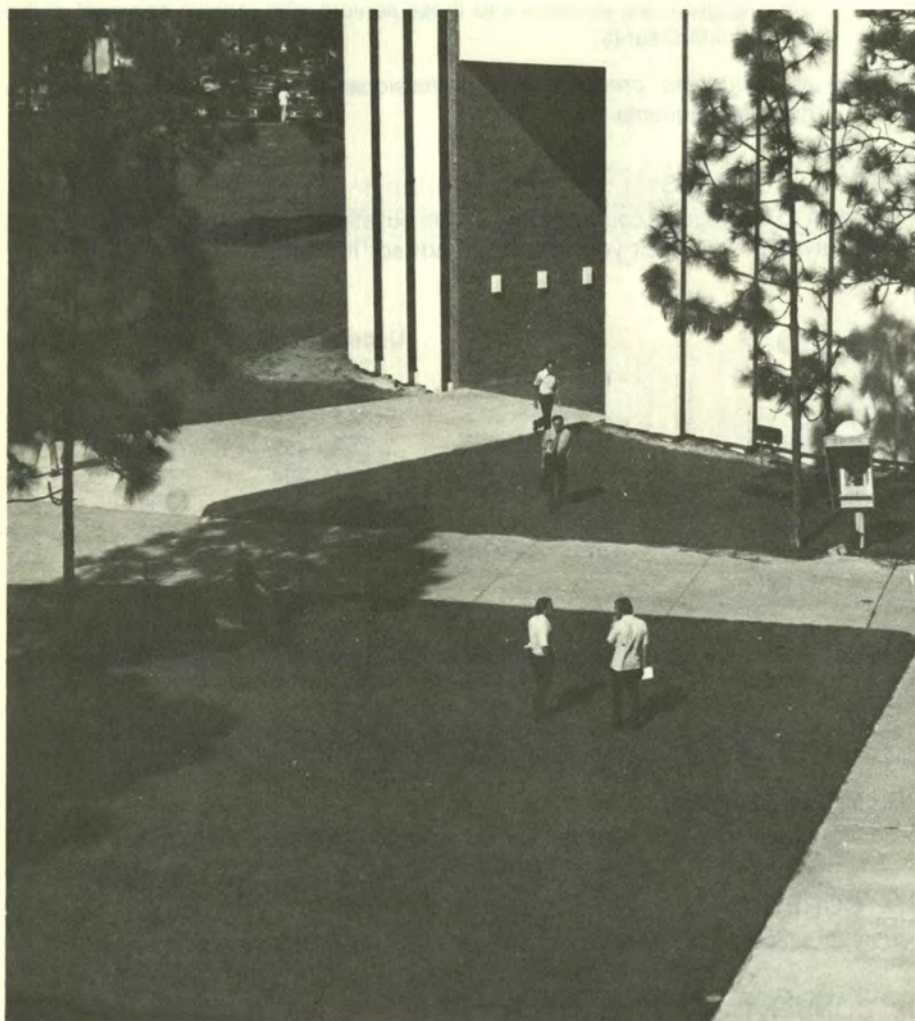
Physical Geology

Geology 201 carries four hours credit but requires six contact hours: two in class and four in laboratory or field work. It is scheduled to be offered in the Winter Quarter.

Quarter designation: F = Fall; W = Winter; S = Spring; Su = Summer.

AVAILABILITY OF COURSES

The University does not offer all of the courses listed in the catalog each year. The class Schedule should be consulted for those courses offered each quarter.



A

ACCOUNTANCY

- ACCY 211** 3 (3,0) F,W,S,Su
Financial Accounting I: Accounting concepts, financial statements, accounting cycle, monetary and fixed assets, inventories, current and long-term liabilities, equity structure of proprietorships, partnerships, corporations.
- ACCY 212** 3 (3,0) F,W,S,Su
Financial Accounting II: Accounting concepts, financial statements, accounting cycle, monetary and fixed assets, inventories, current and long-term liabilities, equity structure of proprietorships, partnerships, corporations.
- ACCY 310** 5 (5,0) F,W,S,Su.
Systems Concepts and Management Accounting: PR: ACCY 212 or ACCY 300 or equivalent. General information systems theory, business financial information requirements; economic information for business functions; cost accounting concepts and relationships, forecasting and budgeting.
- ACCY 311** 5 (5,0) F,W,S,Su
Intermediate Accounting: PR: ACCY 212, 300, or equivalent. An in-depth study of assets, liabilities, and stockholders' equity. Income determination; tax implications; funds flow; mathematical principles and application; professional pronouncements.
- ACCY 312** 5 (5,0) F,W,S,Su
Intermediate Accounting: PR: ACCY 311. A continuation of ACCY 311.
- ACCY 320** 5 (5,0) F,W,S,Su
Cost Accounting: PR: ACCY 310. Concepts of cost behavior; cost accounting principles; cost concepts for special decisions; cost measurement for business income.
- ACCY 410** 5 (5,0) F,W,S,Su
Advanced Accounting: PR: ACCY 312. Problems of partnerships, business combinations, consolidated statements. Fund accounting principles and procedures and their relation to governmental accounting.
- ACCY 430** 5 (5,0) F,W,S,Su
Auditing: PR: ACCY 312. The principles, practices and procedures followed in the audit function. Preparation of related working papers and the audit report.
- ACCY 450** 5 (5,0) F,W,S,Su
Federal Income Tax Accounting: Concepts and methods of determining taxable income of individuals, partnerships and corporations.
- ACCY 470** 3 (3,0) F,W,S,Su
Current Selected Topics: PR: ACCY 312, 320 and Senior standing. An examination and discussion of current changes and controversial topics in financial reporting.
- ACCY 501** 4 (4,0)
Financial Accounting Concepts: PR: Acceptance into the MBA Program. The conceptual background for financial statements for external purposes including problems of the accounting period, the accrual concepts and changing price levels, etc.
- ACCY 601** 3 (3,0)
Accounting Analysis: PR: Graduate standing and ACCY 501 or one year of accounting. (Not

open for accounting majors.) Accounting as an information and measurement system for internal planning and control; concepts and analytical techniques for accumulating costs of products and services.

ACCY 610 5

Contemporary Accounting Theory: PR: Graduate standing and all of foundation courses or equivalents. An examination of the evolution of contemporary accounting theory. Emphasis is on current and future development.

ACCY 612 5

Computers and Information Systems in Accounting: PR: Graduate standing and all foundation courses or equivalents. Introduction to design and management of information flows integrating accounting within the framework of information systems with applications demonstrated through computer models.

ACCY 620 5

Advanced Auditing: PR: Graduate standing and all foundation courses or equivalents. The study of auditing problems with special emphasis on statistical sampling and the auditing of electronic data processing systems.

ACCY 630 5

Cost Accounting for Management Decisions: PR: Graduate standing and all foundation courses or equivalents. Emphasis on cost finding and analysis for management decisions.

ACCY 640 5

Taxation: PR: Graduate standing and all foundation courses or equivalents. An advanced study of tax law with emphasis on business taxes.

ACCY 650 5

Specialized Accounting Problems: PR: Graduate standing and all foundation courses or equivalents. A survey of specialized and regulatory accounting practice with emphasis on SEC filing and governmental and institutional accounting.

AIR FORCE ROTC

AFR 101 1 (1,1) F

The United States Air Force and Strategic Offensive Forces: PR: Qualification for Air Force ROTC or permission of Professor of Aerospace Studies. History, mission, organization and doctrine of the United States Air Force and a study of U.S. Strategic Offensive Forces.

AFR 102 1 (1,1) W

Strategic Defense Forces: PR: AFR 101 or permission of Professor of Aerospace Studies. Concepts of aerospace defense. A study of the various systems and functions associated with defense against manned bombers and missiles.

AFR 103 1 (1,1) S

Strategic Defense Forces: PR: AFR 102 or permission of Professor of Aerospace Studies. A brief review of Army, Navy, and Marine Forces. An introduction to special operations and countersurgency.

AFR 201 1 (1,1) F

The Birth of Airpower: PR: AFR 103 or approval of PAS. A study of the early development of manned flight from the 18th century balloonist through the achievement of mature airpower capabilities prior to World War II.

AFR 202 1 (1,1) W

Airpower: Crisis and Maturity: PR: AFR 201 or approval of PAS. A review of fifteen years of

airpower development, highlighting changes in aircraft technology and employment brought about by experiences in WW II and Korea.

AFR 203 1 (1,1) S

The Aerospace Age: PR: AFR 202 or approval of PAS. A study of aerospace power in the contemporary world and its current employment as a force of stability.

AFR 301 3 (3,1) F

Military Role in Contemporary Society: PR: GMC or two-year program selection and/or approval of PAS. Review and survey of military communicative skills. Examination of broad range of American civil-military relations.

AFR 302 3 (3,1) W

Defense Policy and Strategy: PR: AFR 301 or approval of PAS. A study of the framework of defense policy and formation of defense strategy including political, economic and social constraints upon the national defense structure.

AFR 303 3 (3,1) S

Implementation of Defense Policy: PR: AFR 302 or approval of PAS. An examination of defense implementation by the DOD, Congress and the residency and a survey of officer classification and assignments.

AFR 401 3 (3,1) F

Leadership and Discipline in the Air Force: PR: AFR 303 or approval of Professor of Aerospace Studies. The need for Air Force leadership, professional responsibilities of the officer, need for discipline in the military, and the military justice system.

AFR 402 3 (3,1) W

Principles of Military Leadership and Management: PR: AFR 401 or approval of Professor of Aerospace Studies. Variables affecting military leadership, traits and interactional approaches to leadership, introduction to military management, and systems approach to Air Force management.

AFR 403 3 (3,1) S

Air Force Management and the Junior Officer: PR: AFR 402 or approval of Professor of Aerospace Studies. Pertinent Air Force publications and personnel management policies, as they affect the junior officer. Preparation of each cadet for active duty.

AFR 404 4 (4,0)

Introduction to Flight (Pilot): PR: AFR 301, 302, 303 and/or permission of the Professor of Aerospace Studies. An academic introductory study of weather, navigation, FAA regulations and flight radio procedures.

ALLIED HEALTH SCIENCES

AHS 305 5 (5,0) S

Medical Terminology: A study of the language of medicine and allied health specialties, including word construction, definitions and application of terms.

AHS 320 3 (3,0) F

Health Services Organization: PR: MGMT 301 or C.I. Health services organizational structure; departmental procedures; interdepartmental relationships.

AHS 330 3 (3,0)

Interpretation of Clinical Tests: PR: CHEM 113 and ZOOL 334, or C.I. Introduction to laboratory tests and their evaluation; emphasis will be on tests relating to gas transport and enzymology.

- AHS 350** 3 (3,0) W
Health Law: Principles of law as applied to the health field with special reference to health practices.
- AHS 401** 2
Health Systems in the United States I: Organization and management of health delivery systems in the United States: needs, resources, and programs.
- AHS 402** 2
Health Systems in the United States II: Legal and ethical aspects of health delivery systems in the United States.
- AHS 403** 2
Health Systems in the United States III: Community and professional relations: trends in health care.
- AHS 410** 4 (4,0)S
Community Health Services: The interphase of governmental, voluntary, and private health organizations: consideration of consumer participation, planning implementation and evaluation, manpower and facility needs; social and economic factors.
- AHS 420** 3 (2,2) F
Supervisory Management for Health Services Agencies: PR: AHS 320, or C.I. Budgeting, equipment analyses; inservice education; office environmental factors; department layouts; job descriptions; policy and procedure manuals; staffing; scheduling; labor unions.
- AHS 440** 4 (4,0) F
Fundamentals of Medicine I: PR: ZOOL 324; or ZOOL 334 and ZOOL 335; or C.I. A study of the nature, cause and treatment of specific disease entities.
- AHS 441** 4 (4,0) W
Fundamentals of Medicine II: PR: AHS 440 or C.I. A continuation of AHS 440.
- AHS 501** 2
Health Delivery Systems in the United States I: Organization, management and programs. Patterns of organization of delivery systems, manpower and resources, distribution, needs, scope of programs, consumer factors.
- AHS 502** 2
Health Delivery Systems in the United States II: Legal and ethical aspects of vendors and consumers. Legislative process, enforcement, liability, licensing, court processes, conduct of a witness, confidentiality and privileged communications.
- AHS 503** 2
Health Delivery Systems in the United States III: Community and professional relations. Interaction of health agencies and health professions. Planning, implementation, evaluation, cost containment. Trends in health care.

ART

- ART 201** 3 (0,6) F
Design Fundamentals I: Materials, processes, form. Application to product design, communication design, environmental design, and the visual arts. Emphasis on two-dimensional design problems.
- ART 202** 3 (0,6) W
Design Fundamentals II: Continuation of ART 201. Emphasis on color theory.

- ART 203** 3 (0,6) F,S
Design Fundamentals III: Continuation of ART 202. Emphasis on three-dimensional design in the various sculptural media.
- ART 204** 3 (0,6)
Film Design: A series of exercises in craft, technique, and design for the film, including animation.
- ART 211** 3 (0,6) F
Drawing Fundamentals I: Drawing as a means of formal organization. Introduction to problems in drawing methods and media. Emphasis on descriptive techniques.
- ART 212** 3 (0,6) W
Drawing Fundamentals II: Continuation of ART 211. Emphasis on traditions of spatial organization.
- ART 221** 3 (3,0) F
The History of Art I: Painting, sculpture, and architecture from the Prehistoric Era through the Medieval Period.
- ART 222** 3 (3,0) W
The History of Art II: Painting, sculpture, and architecture from the Renaissance to the 19th Century.
- ART 223** 3 (3,0) S
The History of Art III: Painting, sculpture, and architecture of the 19th and 20th Centuries.
- ART 231** 4 (2,4)
Visual Arts Overview: Analysis of the characteristics and scope of visual arts. Recommended for credit toward cultural and historical foundations section of the Environmental Studies Program.
- ART 301** 3 (2,4) F
Lettering: PR: Six of hours Design Fundamentals or C.I. Workshop study of the classical and historic types styles.
- ART 302** 3 (2,4) W
Graphic Design I: PR: Six hours Design Fundamentals and ART 301, or C.I. Principles of visual communication, methods, materials, and processes. Relationship of perceptual studies to graphic design.
- ART 303** 3 (2,4) S
Graphic Design II: PR: ART 302, ART 341 or C.I. Development of studio techniques and problems stressing balance between articulation and succinct presentation of information.
- ART 304** 3 (2,4)
Design In Advertising: PR: ART 201. Principles and techniques. Not open to art majors. Interfered for visual arts education majors and general university elective.
- ART 305** 3 (0,6)
Three-Dimensional Design: PR: ART 203 or C.I. Intermediate problems in three-dimensional materials, processes, forms.
- ART 308** 3 (0,6)
Jewelry Design: PR: Consent of the instructor.
- ART 311** 3 (0,6)
Intermediate Drawing: PR: Six quarter hours of Drawing Fundamentals or C.I. Intermediate problems in drawing. Emphasis on the human form.

ART

ART

- ART 321** 3 (3,0)
Arts of Pre-Literate Societies: The visual arts in recent and contemporary primitive societies with emphasis on the cultures of Africa and Oceania.
- ART 322** 3 (3,0)
Asian Art: An introduction to the history of visual arts of China, Japan, India and other Eastern cultures.
- ART 324** 3 (3,0)
History of Photography: The development of still photography in terms of its historical, aesthetic, and social impact on Western Culture from 1839 to the present.
- ART 341** 3 F,W,S
Photography: Consideration of basic technical and aesthetic factors in using still photography as a vehicle for visual, artistic expression.
- ART 342** 4 (3,3) W
Cinematography: PR: ART 204 or C.I. Consideration of basic technical and aesthetic factors involved in using motion pictures as a vehicle for visual, artistic expression.
- ART 351** 3 (0,6) F,W,S
Painting: PR: Three quarter hours in Design Fundamentals and three quarter hours in Drawing Fundamentals or C.I.
- ART 361** 3 (0,6)
Printmaking: PR: Three quarter hours of Drawing Fundamentals or C.I. Basic procedure and processes in printmaking. Formal and expressive characteristics of the print media.
- ART 371** 3 (0,6) F,W,S
Sculpture: PR: Six quarter hours in Design Fundamentals, to include three quarter hours in three-dimensional work, or C.I.
- ART 381** 3 (0,6) F,W,S
Ceramics: PR: ART 203 or C.I. Basic concepts of ceramic design, experience in processes of forming, decorating, glazing, and firing pottery.
- ART 382** 3 (0,6)
Experiments in Art and Technology: PR: Consent of Instructor.
- ART 402** 3 (2,4) F
Advanced Graphic Design I: PR: ART 303, acceptable portfolio or C.I. Typographic organization, paper, and light-sensitive materials related to design and production techniques.
- ART 403** 3 (2,4) W
Advanced Graphic Design II: PR: ART 402 or C.I. Pictorial and symbolic expression in creation of poster design, symbols, magazine and book design.
- ART 404** 3 (2,4) S
Advanced Graphic Design III: PR: ART 403 or C.I. Individual problems providing students with an opportunity to initiate search for an independent formula of graphic design principles.
- ART 405** 3 (0,6)
Advanced Three-Dimensional Design: PR: ART 305. May be repeated for credit. Advanced problems in three-dimensional materials, processes, form.
- ART 408** 3 (0,6)
Advanced Jewelry Design: PR: ART 308. May be repeated for credit.

- ART 409** **3 (0,6)**
Fibers, Fabrics, Textiles and Synthetics: Textile design and production, including non-loom and loom weaving processes.
- ART 410** **3 (0,6)**
Metals, Woods, Leathers and Stones: Processes and techniques of production in these traditional craft materials.
- ART 411** **3 (0,6)**
Advanced Drawing: PR: ART 311. May be repeated for credit.
- ART 421** **4 (3,3)**
Purposes of Art: An Analysis and Appreciation of the visual arts in terms of their various purposes.
- ART 425** **4 (4,0)**
Religious Symbolism in the Visual Arts: A study of the origin, migration, and transmutation of religious signs, symbols and images in art history.
- ART 431** **4 (3,3)**
Developing Visual Creativity: Analysis of the nature of the creative faculties and the development of creativity through visual processes.
- ART 433** **3 (3,0)**
Theory and Criticism of the Visual Arts: Criteria of criticism; analysis of works, elements of psychology and sociology of art. Developments in the arts of the 20th Century.
- ART 434** **3 (3,0)**
Art and Technology: The impact of technological developments in the visual arts of the 20th Century.
- ART 435** **4 (4,0)**
Environmental Art: Analysis of aesthetic design factors, related to city planning, architecture, product design, and experimental environmental arts.
- ART 441** **3 (0,6) F,S**
Advanced Photography: PR: ART 341. May be repeated for credit.
- ART 442** **4 (3,3)**
Advanced Cinematography: PR: ART 342. May be repeated for credit.
- ART 443** **3 (3,3)**
Special Problems in Photography: PR: ART 341 or C.I. A series of directed photographic problems of a research nature. May be repeated for credit.
- ART 451** **3 (0,6) F,W,S**
Advanced Painting: PR: ART 351. May be repeated for credit.
- ART 461** **3 (0,6)**
Advanced Printmaking: PR: ART 361. May be repeated for credit.
- ART 471** **3 (0,6) F,S**
Advanced Sculpture: PR: ART 371. May be repeated for credit.
- ART 481** **3 (0,6) F,W,S**
Advanced Ceramics: PR: ART 381. May be repeated for credit.
- ART 482** **3 (0,6)**
Advanced Experiments in Arts and Technology: PR: ART 391. May be repeated for credit.

ART 484

3 (0,6)

Senior Studio and Exhibition: PR: By petition (see page 172). Required of all B.F.A. degree candidates. Not open to B.A. degree candidates.

B

BIOLOGY

BIOL 103

4 (3,2) F,S

Biological Principles: A study of various biological factors which affect the health and survival of man in modern society. Meets ESP requirements; designed for non-majors.

BIOL 105

4 (3,3) S

Biology and Environment: Biological implications of the interaction among human society, population, and technology in relation to the environment and natural systems. Designed for non-majors.

BIOL 110

5 (4,2) F,W,Su

Basic Biology: Basic principles, unifying concepts and facts of modern biology. Introduction to quantitative biological experimentation. For Biological Sciences, Allied Health Sciences and preprofessional majors.

BIOL 332

5 (3,4) S

Cell Physiology: PR: 11 hours in biological sciences or C.I. CR: CHEM 323. Basic physiological processes, cellular organization, exchange of materials, conversion of energy, irritability and contractibility.

BIOL 350

4 (3,3) F,S

Principles of Ecology: PR: 12 hours in biological sciences. Elements of ecosystems, biogeochemical cycling, environmental factor interactions, population dynamics and evolution, communities, and succession.

BIOL 360

4 (3,3) F,S

Genetics: PR: BIOL 110. Basic principles of heredity as applied to plants and animals. Laboratory will emphasize work with *Drosophila*.

BIOL 363

4 (3,2) F,W

Genetics and Man: BIOL 103 or 110. Basic principles of genetics as illustrated by human heredity. Designed for non-majors.

BIOL 410

5 (3,6)

Microtechnique: PR: 1 yr. biological science. Preparation of plant and animal tissue for microscopic study; embedding; use of various microtomes; staining procedures; whole mounts.

BIOL 450

5 (3,6) F

Limnology: PR: BIOL 350 or C.I. Introduction to principles of limnology and methods for freshwater ecology with respect to physical, chemical and biological parameters.

BIOL 451

5 (3,6) W

Freshwater Systems: PR: BIOL 450 or C.I. Primary and secondary productivity and interaction among factors such as nutrients, pollutants, temperature radiation, turbidity, and seasons.

BIOL 455

4 (3,3) S

Community Ecology: PR: BIOL 350 and STAT 301: or C.I. Emphasis on dynamics of biotic

communities, plant community classification and quantitative description. Interaction of soils, climate and animals in succession.

BIOL 463 **3 (3,0)**

Organic Evolution: PR: 11 hours in biological sciences including BIOL 360. An outline of evolutionary principles, natural selection and phylogeny; origin of variation and origin of species.

BIOL 470 **3 (3,0)**

History of Biology: PR: Junior standing. Pople and events from Aristotelian times to the present; development of the science of biology.

BIOL 520 **4 (4,0)**

Cell Biology: PR: 11 hours in biological sciences and CHEM 323. Biological organization and function at the cellular-organelle level.

BIOL 554 **5 (3,6)**

Ecology of Running Water: PR: BIOL 450 or C.I. Biological adaptations and communities in relation to channel formation, flow dynamics, and physico-chemical aspects of running waters.

BIOL 555 **4 (3,3)**

Synecology: PR: BIOL 350 and STAT 301: or C.I. Emphasis on dynamics of biotic communities, plant community classification and quantitative description. Interaction of soils, climate and animals in succession. Special project required.

BIOL 560 **5 (3,6)**

Cytogenetics: PR: BIOL 360 or C.I. Chromosomal coarse and fine structure, biochemistry, and behavior as related to genetics and evolutionary mechanisms.

BIOL 563 **3 (3,0)**

Evolutionary Biology: PR: 11 hours in biological sciences including BIOL 360. An outline of evolutionary principles, natural selection and phylogeny; origin of variation and species. Special project required.

BIOL 564 **5 (3,6)**

Population Genetics: PR: BIOL 360, 460; Statistics or C.I. Mathematical evaluation of Mendelian populations; influences of mutation, selection, migration and genetic drift upon gene frequency.

BIOL 618 **3 (2,2) Su**

Field Methods for Biology: PR: Two years of biology. Experimental techniques and design in field biological research.

BIOL 619 **3 (2,2)**

Laboratory Methods for Biology: PR: BIOL 332 or MICR 430. Experimental techniques and design in laboratory biological research.

BIOL 653 **5 (3,6) W**

Population Ecology: PR: Ecology, statistics and 2 years of biological science. Population as an ecological unit with emphasis on growth, regulation, dynamics, competitive interactions and predation.

BIOL 675 **4 (4,0) W**

Contemporary Studies in Environmental Biology: PR: Graduate standing. Analysis of current publications and developments in science and technology applicable to environmental problems.

BOTANY

- BOT 100** 4 (2,4) W
General Botany: Introduction to botany; plant structure and function, including a survey of the plant kingdom giving special emphasis to forms important to man.
- BOT 320** 5 (3,6)
Comparative Morphology of Plants: PR: BOT 100. A sequential survey of plants with emphasis on evolutionary relationships, structure and function.
- BOT 325** 4 (3,3)
Plant Anatomy: PR: BOT 100. A study of the development, structure and function of the principal organs and tissue of vascular plants.
- BOT 345** 5 (3,6)
Plant Taxonomy: PR: BOT 100. An introduction to systematics, classification and identification of vascular plants with emphasis on the flora of peninsular Florida.
- BOT 371** 3 (3,0)
Plants and Man — Ethnobotany: Man's historical and modern uses of plants economically important in various cultures. Designed for non-majors.
- BOT 372** 3 (3,0) S
Plants and the Urban Environment: The selection, placement, propagation and care of ornamental plants in residential, commercial and industrial areas. Designed for non-majors.
- BOT 430** 4 (3,3)
Plant Physiology: PR: BIOL 332 or C.I. A study of the mechanisms used by plants to cope with their environment.
- BOT 441** 4 (3,3)
Freshwater Algae: PR: BOT 100 or C.I. A lecture-laboratory course to survey the physiology, diversity and ecology of the freshwater algae.
- BOT 443** 4 (2,6)
Mycology: PR: BOT 320 or MICR 200 or C.I. A lecture-laboratory course emphasizing form and function of major fungous groups.
- BOT 453** 3 (3,0)
Plant Geography: PR: BIOL 350 or BOT 451 or C.I. The major climatic plant formations of the world and historical plant geography.
- BOT 522** 5 (3,6)
Eumycota: Higher Fungi: PR: BOT 443 or C.I. Biology, morphology, and taxonomy of the Ascomycetes, Deuteromycetes, and Basidiomycetes.
- BOT 530** 4 (3,3)
Autecology: PR: BIOL 332 or C.I. A study of the mechanisms used by plants to cope with major environmental variables. Special project required.
- BOT 542** 4 (3,3)
Bryology: PR: BOT 320 or C.I. A lecture-laboratory survey course on the diversity and classification of mosses, liverworts and hornworts with special emphasis on those found in Florida.
- BOT 543** 4 (2,6)
Biology of Fungi: PR: C.I. A lecture-laboratory course emphasizing form and function of major fungous groups. Special project required.
- BOT 547** 4 (3,3)
Field Botany: PR: 12 hours in biological sciences or science teaching experience or C.I.

Classification and identification among lower and higher plant groups with emphasis on field experience. Major reference sources reviewed.

BOT 549**5 (3,6)**

Plant Biosystematics: PR: BOT 345 or 547. Studies of evolutionary relationships among plant taxa and populations utilizing cytological, morphological, and biochemical techniques.

BUSINESS ADMINISTRATION**BADM 271****3 (3,0) F,W,S**

Legal Environment of American Enterprise: PR: Sophomore standing. The legal and socio-economic environment of American enterprise.

BADM 301**3 (3,0) F,W,S**

Business Concepts: PR: Junior standing. The relationship of business and society. Discussion sections are devoted to developing the skill of solving organization problems. Not useable for BSBA degree credit.

BADM 302**3 (3,0)**

Personal Investments: PR: Junior Standing. Study of the fundamentals of managing and investing one's money. Topics include: budgeting, home ownership, insurance, stocks and bonds. Course satisfies Advance Environmental Studies requirement.

BADM 371**3 (3,0)**

Legal Environment of Business: PR: Junior standing. The presentation of law as an expanding social and political institution in the environment of the business enterprise.

BADM 372**3 (3,0)**

Business Law: PR: BADM 271. Recognized commercial organizations including agencies, partnerships, corporations. An examination of each and their functions in the business world.

BADM 373**3 (3,0)**

Business Law: PR: BADM 271 (BADM 372 desirable). An examination of the law underlying the transfer and sale of goods, commercial paper and secured transactions including their interaction with the commercial environment.

BADM 374**3 (3,0)**

Property Law: PR: BADM 271 or C.I. Includes bailments, real and personal property, and security interests therein, insurance, suretyship and guaranty. (Same as LES 374).

BADM 444**3 (3,3)**

International Business Operation: PR: Senior standing or C.I. An integration of economics and functional areas of business focused upon the problems of managing international business operations through cases emphasizing financial and marketing problems.

BADM 485**4 (4,0) F,W,S,Su**

Business Policies: PR: Senior standing, completion of core requirements. The student is expected to utilize the subject matter in the business core and his major in analyzing business problems. Written cases are required.

BADM 490**2 (2,0)**

Senior Seminar: Business in Human Affairs: Business issues and problems as they relate to human affairs. Primarily intended for the senior student in the Advanced Environmental Studies seminars. Business students not admitted.

BADM 501**3 (3,0)**

Business Environment and Business Law: PR: Acceptance into the M.B.A. Program. An

analysis of the legal and socio-economic environment surrounding business practices as affected by significant State and Federal legislation and regulation.

BADM 601 **3 (3,0)**

Operations Research Models for Business: PR: Graduate Standing and ECON 521 or equivalent. Quantitative techniques useful for the solution of business problems. Mathematical model building to aid the decision-making process is stressed.

BADM 611 **3 (3,0)**

Systems Analysis for Business Problem Solving: PR: Graduate Standing and MGMT 501 or equivalent. A conceptual framework of the systems approach for analyzing business problems, related developments in systems theory and applications to business.

BADM 621 **3 (3,0)**

Business Policy and Responsibility: PR: Graduate Standing and all foundation courses or equivalent. Functions and responsibilities of management, motivation of the business man and factors governing business decisions.

BADM 637 **3 (3,0)**

Simulation of Dynamic Systems: PR: Graduate Standing. A survey of techniques for conducting simulation experiments on digital computers. These experiments involve mathematical and logical models of a business or economics system.



C

CHEMISTRY

- CHEM 101** 4 (4,0) F,S
Chemistry and Society: Descriptive approach to the understanding of the role of chemistry in human affairs. No mathematics required.
- CHEM 102** 4 (4,0)
Chemistry and Society: PR: CHEM 101. Continuation of CHEM 101.
- CHEM 111** 5 (4,2) F,W,Su
General Chemistry (Fundamentals): An introductory study of the fundamental concepts of chemistry, oriented toward AHS and Biology Education majors.
- CHEM 112** 3 (3,0) F,W,S
General Chemistry (Organic): PR: CHEM 111. A survey of organic chemistry stressing its applications to our society. The chemistry of functional groups will be related to industrial and natural processes.
- CHEM 113** 3 (3,0) W,S,Su
General Chemistry (Biochemistry): PR: CHEM 112. A conceptual approach to the chemistry of living systems.
- CHEM 115** 1 (0,3) S
General Chemistry Laboratory (Organic-Biochemistry): PR: CHEM 112. An introduction to organic and biochemical laboratory operations.
- CHEM 251** 2 (1,3) F,S
Analytical Fundamentals: PR: CHEM 264. Development of basic analytical skills and problem practice in stoichiometry, solution chemistry, and oxidation-reduction.
- CHEM 261** 4 (4,0) F,W,Su
Chemistry Fundamentals I: PR: High School Chemistry or CHEM 111. Basic physical theory of chemical reactivity, atomic structure, chemical bonding, periodicity, stoichiometry, equilibria, thermodynamics, and kinetics.
- CHEM 262** 3 (3,0) F,W,S
Chemistry Fundamentals II: PR: CHEM 261. Continuation of CHEM 261.
- CHEM 263** 3 (3,0) F,W,Su
Chemistry Fundamentals III: PR: CHEM 262. Continuation of CHEM 262.
- CHEM 264** 1 (0,3) F,W,S
Chemistry Fundamentals Laboratory: PR: CHEM 111 or CHEM 261. Illustration of chemical principles and introduction to the techniques of inorganic and physical chemistry.
- CHEM 321** 4 (4,0) F,W
Organic Chemistry I: PR: CHEM 263. Theory and applications of organic chemistry: structure, bonding, kinetics, thermodynamics, reaction mechanisms, synthesis, and stereochemistry. Structure elucidation via spectrometric techniques.
- CHEM 322** 3 (3,0) W,S
Organic Chemistry II: PR: CHEM 321. Continuation of CHEM 321.

- CHEM 323** 3 (3,0) S,Su
Organic Chemistry III: PR: CHEM 322. Continuation of CHEM 322.
- CHEM 324** 2 (0,6) W,S
Organic Laboratory Techniques I: PR: CHEM 321. An introduction to the laboratory techniques of organic chemistry including the preparation, reaction, and analysis of organic compounds.
- CHEM 325** 2 (0,6) F
Organic Laboratory Techniques II: PR: CHEM 322 and CHEM 324. Open-end laboratory to develop synthesis, techniques and structure elucidation skills.
- CHEM 351** 3 (2,3) F,W
Analytical Chemistry I: PR: CHEM 251. Lecture-Laboratory. Laboratory practice of classical and instrumental methods. Emphasis on problem solutions and choice of analytical procedure.
- CHEM 352** 3 (1-6) W,S
Analytical Chemistry II: PR: CHEM 351. Continuation of CHEM 351.
- CHEM 355** 4 (2,6) F
Clinical Chemistry: PR: CHEM 113 and CHEM 352. A lecture-laboratory course designed to introduce the student to modern clinical chemical procedures. Interpretation and usefulness of the laboratory data obtained will be stressed.
- CHEM 361** 5 (4,2) F
Physical Chemistry I: PR: CHEM 263, PHYS 212, and MATH 322. Rigorous treatment of atomic and molecular structure, thermodynamics, kinetics, and chemical bonding.
- CHEM 362** 3 (3,0) W
Physical Chemistry II: PR: CHEM 361. Continuation of CHEM 361.
- CHEM 363** 3 (3,0) S
Physical Chemistry III: PR: CHEM 362. Continuation of CHEM 362.
- CHEM 364** 2 (0,6) W
Physical Chemistry Laboratory I: PR: CHEM 351 and CHEM 361. Classical as well as modern instrumental techniques coupled with computer data processing to measure physical properties and determine atomic and molecular parameters.
- CHEM 365** 2 (0,6) S
Physical Chemistry Laboratory II: PR: CHEM 362 and CHEM 364. Continuation of CHEM 364.
- CHEM 421** 3 (3,0)
Advanced Organic Chemistry I: PR: CHEM 323 and CR: CHEM 362. Organic synthesis, reactions and mechanisms, and structural theory from the perspective of thermodynamics and kinetics.
- CHEM 422** 3 (3,0)
Advanced Organic Chemistry II: PR: CHEM 421. Continuation of CHEM 421.
- CHEM 431** 4 (4,0) S
Inorganic Chemistry: CR: CHEM 363. A discussion of descriptive inorganic chemistry based on various bonding theories, thermodynamics and kinetics.
- CHEM 441** 3 (3,0) F,W
Biochemistry I: PR: CHEM 323. A consideration of proteins, carbohydrates, nucleic acids, enzymes and their effect on biochemical systems, and inter-relationship of intermediary metabolism.

- CHEM 442** **3 (3,0) W,S**
Biochemistry II: PR: CHEM 441. Continuation of CHEM 441.
- CHEM 443** **3 (3,0) S**
Biochemistry III: PR: CHEM 422. Continuation of CHEM 442.
- CHEM 444** **2 (0,6) W**
Biochemical Methods I: PR: CHEM 113 or CHEM 441, and CHEM 352. A laboratory course stressing the application of the chemical arts to the separation, identification, and quantification of materials of biological significance.
- CHEM 445** **2 (0,6) S**
Biochemical Methods II: PR: CHEM 444. Continuation of CHEM 444.
- CHEM 451** **5 (3,6) F**
Adv. Analytical Laboratory Technique I: PR: CHEM 323, CHEM 352, and CHEM 363. A lecture-laboratory course designed to give in-depth coverage to modern methods of analysis including electrochemistry, spectroscopy, and separation techniques.
- CHEM 452** **4 (2,6)**
Adv. Analytical Laboratory Technique II: PR: CHEM 451. A lecture-laboratory course in which students propose and evaluate procedures for inorganic and organic analyses.
- CHEM 461** **3 (3,0)**
Advanced Physical Chemistry: CR: CHEM 363 and PR: MATH 324. A rigorous treatment of selected topics of thermodynamics, kinetics, quantum mechanics, and structure.
- CHEM 471** **3 (3,0)**
Introduction of Nuclear Chemistry: PR: CHEM 362. Discussion of fundamental particles, nuclear reactions, radioactivity, radiation chemistry, and isotope chemistry.
- CHEM 474** **3 (1,6)**
Radiochemical Techniques: PR: CHEM 352. A lecture-laboratory course stressing radiochemical handling techniques, radiation safety, and the detection and measurement of nuclear radiation.

CIVIL ENGINEERING & ENVIRONMENTAL SCIENCES

- CEES 321** **3 (2,3)**
Surveying: CR: Junior Standing. Theory and field practice in engineering measurements, and the reduction and adjustment of data.
- CEES 322** **4 (3,3) F**
Engineering and Environmental Geology: Principles of physical geology with emphasis on engineering and environmental topics. Study of land forms, geologic maps, geologic structure, weathering, groundwater, mass wasting, and earthquakes.
- CEES 351** **4 (4,0)**
Structural Mechanics: PR: ENGR 312. Analysis of statically indeterminate structures by flexibility and stiffness methods, and energy methods. Analysis of columns. Plastic bending.
- CEES 401** **3**
Environmental Engineering - Chemical Foundations I: PR: Engineering applications of physical and analytical chemistry in the treatment of water and wastewater.
- CEES 402** **3**
Environmental Engineering - Chemical Foundations II: PR: CEES 401 or C.I. Continuation

of CEES 401 to include organic chemistry and biochemistry and their application in environmental engineering.

CEES 411 **4 (4,0) F,S**
Environmental Engineering — Water Supply: CR: ENGR 332. Water resources, hydrologic cycle, water quality, chemistry of natural water, water treatment, transmission and distribution.

CEES 412 **4 (4,0) W,Su**
Environmental Engineering — Wastewater: CR: ENGR 332. Drainage systems, collection and transmission of wastewater, channel flow, biodegradation of organic wastes, principles of wastewater treatment, effluent and sludge handling and disposal.

CEES 414 **3 (3,0) S**
Water and Wastewater Systems Design: PR: CEES 411 and 412 or C.I. Planning capacity and design of water distribution systems, sanitary sewerage, storm drainage systems, water and wastewater treatment plants.

CEES 415 **3 (3,0)**
Atmospheric Pollution Control: PR: Senior standing. Atmospheric composition and dynamics, sources and nature of contaminants, toxicity thresholds and biological significance, engineering methods of measurement and control.

CEES 431 **4 (3,3) W**
Soil Mechanics and Foundation Engineering I: PR: ENGR 312. Nature of soils, classification, engineering properties, consolidation, soil strength, groundwater and seepage, compaction and stabilization.

CEES 432 **4 (3,3) S**
Soil Mechanics and Foundation Engineering II: PR: CEES 431. Continuation of CEES 431 with emphasis on foundations including soil investigations, earth pressures, settlements, bearing capacity, pile foundations, slope stability.

CEES 451 **4 (4,0)**
Matrix Methods of Structural Analysis I: PR: CEES 351 or C.I. Structural analysis of beams, frames, and plates by matrix methods.

CEES 455 **3 (2,2)**
Structural Steel Design: PR: ENGR 312. Design of steel structural members. Selected topics in beam design, column design, plastic design, connections and built-up members.

CEES 457 **3 (2,2)**
Structural Concrete Design: PR: ENGR 312. Principles of designing reinforced concrete members. Selected topics in concrete mixes, beams, columns, and ultimate analysis.

CEES 461 **3 (3,0)**
Transportation Engineering: PR: ENGR 341 and 371. Investigation of all forms of transport — highway, rail, water, air. Systems approach to planning, design, construction, operation, and administration of transportation networks.

CEES 462 **3 (3,0)**
Transportation Engineering: PR: CEES 461. Advanced topics in transportation system analysis.

CEES 463 **3 (3,0)**
Traffic Engineering: PR: CEES 461 and ENGR 371. Study of operator and vehicle characteristics, street capacity, signals, signs and markings. All phases of traffic engineering as applied to urban areas.

- CEES 471** **3 (3,0)**
Urban Planning: PR: ENGR 342. History and principles of planning. Basic economic, land use, population, conservation, and government planning concepts. Quantitative methods for comprehensive studies of urban development.
- CEES 472** **3 (3,0)**
Urban Planning: PR: CEES 471. Municipal organization and administration, public health, public utilities, services, zoning, replanning, critical studies.
- CEES 501** **3 (2,3) F,S**
Environmental Engineering — Chemistry I: Study of fundamental principles of physical and analytical chemistry applicable to treatment of water and wastewater. Chemical thermodynamics, chemical kinetics, chemical equilibria, water analysis.
- CEES 502** **3 (2,3)**
Environmental Engineering — Chemistry II: PR: CEES 501 or C.I. Continuation of CEES 501 to include study of fundamental principles of organic chemistry and biochemistry as applied to environmental quality control, biodegradation of wastes, and wastewater analysis.
- CEES 503** **3 (3,0)**
Environmental Impact Assessment: PR: CEES 411 and 412 or C.I. Evaluating, estimating, and predicting the effects of structures, processes, and systems upon the environment and the effects of environmental changes upon human populations.
- CEES 518** **3 (3,0)**
Hydraulic Engineering: Application of principles of fluid mechanics to engineering problems. Topics include open channel flow, flow in conduits, hydraulic machinery, reservoir planning, and other hydraulic works.
- CEES 525** **3 (3,0)**
Advanced Topics in Engineering Geology: Geologic aspects of major civil engineering works including dams, reservoirs, urban development, transportation systems, etc.
- CEES 530** **3 (3,0)**
Foundation Design I: Design of fundamental foundation units including spread footings, combined footings, mats, and retaining walls.
- CEES 581** **3 (3,0)**
Water Resources Engineering: PR: C.I. Hydrology, hydraulics, pressure conduits, open channels, and uses of water. Water resources will be studied using economic analysis and operations research techniques.
- CEES 582** **3 (3,0)**
Water Resources Economics: PR: CEES 581. General micro-economic concepts, benefits and costs from investment alternatives, external diseconomies, effluent charges, interest rates, design life, and case studies of foreign and domestic policies.
- CEES 601** **4 (4,0)**
Unit Operations and Processes of Sanitary Engineering I: PR: CEES 411/611 and CEES 412/612. Theory and design of physical, chemical, and biological operations and processes used in sanitary engineering.
- CEES 602** **4 (4,0)**
Unit Operations and Processes of Sanitary Engineering II: Continuation of CEES 601. Theory and design of physical, chemical, and biological operations and processes.
- CEES 603** **2 (1,3)**
Unit Operations and Processes Laboratory: PR: CEES 502 or C.I. Laboratory exercises in

physical, chemical, and biological processes.

CEES 604 **3 (3,0)**

Water and Wastewater Treatment Systems: PR: CEES 611 and 612 or C.I. Integration of unit operations and processes into treatment systems. Emphasis will be placed on functional, hydraulic, and economic design using computers.

CEES 611 **4 (4,0) F**

Environmental Engineering — Water Supply: Water resources, hydrologic cycle, water quality, chemistry of natural water, water treatment, transmission, and distribution.

CEES 612 **4 (4,0) W**

Environmental Engineering — Wastewater: Drainage systems, collection and transmission of wastewater, channel flow, biodegradation of organic wastes, principles of wastewater treatment, effluent and sludge handling and disposal.

CEES 614 **3 (3,0) S**

Water and Wastewater Systems Design: PR: CEES 611 and 612 or C.I. Planning capacity and design of water distribution systems, sanitary sewerage, storm drainage systems, water and wastewater treatment plant.

CEES 615 **3 (3,0)**

Atmospheric Pollution Control: Atmospheric composition and dynamics, sources and nature of contaminants, toxicity thresholds and biological significance, engineering methods of measurement and control.

CEES 618 **3 (3,0)**

Solid Wastes Management: Study of the extent and characteristics of the solid waste problem, collection and disposal systems, and environmental interfaces and effects.

CEES 620 **3 (3,0)**

Groundwater and Seepage: Theories of groundwater movement, geological factors, analysis techniques, etc. Emphasis on practical considerations.

CEES 630 **3 (3,0)**

Foundation Design II: Continuation of topics in CEES 530 including sheet piles and pile foundations.

COMMUNICATION

COM 100 **4 (4,0) F,W,S,Su**

Basic Communication: Survey of basic factors affecting human interaction through communication; theories and models of communication; contributions of behavioral sciences and related arts; mass media in society.

COM 301 **4 (4,0) F,W,S,Su**

Communication as a Behavioral Science: Basic principles of the behavioral science approach to the study of contemporary communication.

COM 310 **4 (4,0)**

History of the Motion Picture: Development of the film industry, its social and economic impact. Same as THA 310.

COM 311 **4 (4,0) F,W,S,Su**

Business and Professional Communication: PR: SPE 101 or C. I. Theoretical and practical training in effective presentational speaking for business and professions.

- COM 312** 4 (4,0) F,S
Leadership Through Oral Communication: A theoretical and practical investigation of leadership in oral communication situations, principles of parliamentary law, and approaches to problem solving.
- COM 313** 4 (4,0) W
Interpersonal Communication: Nature of the communication process; variables affecting the process and the individuals involved. Analysis of communication models, interactant behavior, situational cues, verbal and nonverbal messages.
- COM 320** 4 (4,0) F
Introduction to Communicative Disorders: Etiology, symptoms, and methods of diagnosing and treating communicative disorders. For beginning and prospective majors in Communicative Disorders.
- COM 321** 4 (4,0) S
Biolinguistics: The Communicative Dyad: Species-inherited communicative bonding: Evolution of mother-infant dyads in mankind and animals. Foundations of biolinguistic and social imprinting with implications for communicative disorders.
- COM 350** 4 (4,0)
Oral Communication for Television: PR: SPE 101. Practice and performance speech preparation and delivery for television. Types of speeches include television demonstrative, television stimulative and the television persuasive. Speeches televised in television laboratory.
- COM 363** 4 (4,0) Su
Group Interaction and Decision Making: A study of small group processes. Attention is given to problem solving, leadership emergence, conformity behavior, and group member role responsibilities.
- COM 377** 4 (4,0) S
Differential Diagnosis in Communication Disorders: PR: SPE 261, 364, COM 320, 321. Lectures, readings, observations and participation in the evaluative procedures concerned with speech and language skills of the handicapped.
- COM 400** 4 (4,0)
Opinion and the Mass Media: Role of the mass media in influencing public opinion; techniques of opinion measurement, and impact of opinion polls on voters.
- COM 401** 4 (4,0)
Communicative Disorders: Articulation: PR: SPE 261, 364, COM 320, PSY 301. Survey of articulation disorders and their management. Observations required.
- COM 402** 4 (4,0) F
Communicative Disorders: Language: PR: SPE 261, 364, COM 320. Survey of voice disorders and their management. Observations required.
- COM 403** 4 (4,0) W
Communicative Disorders: Voice: PR: SPE 261, 364, COM 320 and PSY 301. Survey of voice disorders and their management. Observations required.
- COM 404** 4 (4,0)
Communicative Disorders: Stuttering: PR: SPE 261, 364, COM 320 and PSY 301. Survey of rhythm disorders and their management. Observations required.
- COM 405** 4 (4,0)
Clinical Methods in Communicative Disorders: PR: SPE 261, 364, COM 320, 321. An

analysis of techniques and methods of planning and executing therapeutic programs for communicatively handicapped individuals.

COM 406**5 (5,0)**

Basic Instrumentation for Communicative Disorders: PR: C.I. Calibration and instrumentation for communicative sciences. Basics of circuitry as well as operation and minor repairs of audiological and speech pathology.

COM 410**4 (4,0) F,S**

Social Responsibilities of the Mass Media: Relationships between the mass media and society; examination of social and ethical responsibilities of the media.

COM 411**4 (4,0) F,W**

Legal Responsibilities of the Mass Media: Legal rights and restrictions, including Constitutional guarantees, libel, invasion of privacy, and contempt of court.

COM 414**4 (4,0) W**

Mass Communication and Government: Role, responsibilities, and non-legal problems of both the government and press in the process of conveying governmental news to the public.

COM 415**4 (4,0)**

Informational Communication: An examination of available communication systems (non-technical) and their utilization within business, educational, entertainment, industrial, medical, and military organization.

COM 420**1 (1,1) W**

Practicum in Communication: PR: C.I. May be repeated three times for credit.

COM 421**2 (2,0)**

Current Affairs Analysis: An analytical approach to the handling of the major news events through mass communications, with emphasis on their social, economic, political, cultural and historical impact.

COM 429**4 (4,0)**

Mass Media and Popular Culture: An impact study of mass media upon American culture past to present.

COM 440**1-12 (0,1-12) F,W,S,Su**

Clinical Observation and Practice: PR: C.I. Observation and supervised participation in speech pathology and audiology in the university clinic and local clinics.

COM 444**4 (4,0)**

Speech Science: PR: C.I. A comprehensive study of the physics of sound as related to the vocal mechanism including the use of instrumentation in voice analysis.

COM 445**4 (4,2) S**

Basic Audiology: PR: SPE 261, 364, COM 320. Introduction to physics of sound, anatomy of hearing mechanism, pure tone audiometry, hearing aids, problems of the hearing handicapped. Observation and practice required.

COM 450**4 (4,0)**

Aural Habilitation: PR: COM 445. Principles and procedures in the utilization of residual hearing, auditory training, speech reading and the use of hearing aids.

COM 451**5 (5,0)**

Speech and Language for the Deaf and Hard of Hearing: PR: C.I. Principles of language and speech development in pre-school and school-age hard-of-hearing and deaf children.

- COM 457** 1-15 (0,1-15) F,W,S,Su
Communication Internship: PR: C.I. Internship in radio, television, film, journalism, public relations, advertising and speech involving practicum at selected communications organizations for one quarter.
- COM 460** 4 (4,0)
Group Dynamics: A study of human behavior in group situations.
- COM 461**
Nonverbal Communication: Review of current behavioral research in such areas as proxemics, kinesics, physical characteristics, tactile communication and paralanguage. Lectures are supplemented by frequent nonverbal exercises.
- COM 462** 4
Attitudes and Communication: Effects of communication on beliefs, attitudes, values, and human behavior.
- COM 463** 4 (4,0) W
Studies in Listening: Analysis of current trends, professional literature, and resource materials bearing upon the teaching of listening. Practice in listening; preparing listening experiences; oral and written reports.
- COM 501** 4 (4,0) F
Speech Communication Instruction: PR: C.I. Communication models as teaching devices, design of communication curricula, instructional media with speech practicum and classroom criticism and evaluation.
- COM 507** 4 (4,0)
Freelance Writing: PR: Evidence of satisfactory writing skills. A study of the techniques and procedures of freelance writing, including the preparation of several manuscripts.
- COM 510** 4 (4,0)
Survey of Communicative Disorders: A survey of speech, language and hearing disorders for habilitative personnel and other interested professionals.
- COM 511** 5 (5,0)
Communicative Disorders Programs for the Public Schools: PR: C.I. Methods and techniques for the public school clinician; including organization of public school programs. Observations required.
- COM 512** 4 (4,0) W
Audiology: PR: C.I. Advanced techniques in pure-tone speech, and automatic audiometry, with emphasis on interpretation of audiograms and differential diagnosis. Practice required.
- COM 513** 4 (4,0)
Auditory Problems of Infants and Children: PR: C.I. Development of sensory perception, auditory deprivation tests, and testing techniques with the neonate, infant, and young child.
- COM 514** 4 (4,0)
Hearing Conservation: PR: C.I. Information regarding the prevention of hearing loss and the establishing of hearing conservation programs.
- COM 520** 4 (4,2) S
Psycholinguistics: Foundations of language in affective consciousness and the human nervous system. Pragmatic analysis of word meaning and its precise scientific measurement. Implications for Communicative Disorders.

- COM 562** 4 (4,0) S
Persuasion: Attitude Formation and Change: A survey of the immediate and direct ways in which persuasive communications and social groups come to influence attitudes.
- COM 568** 5 (4,0) W
Evolution of Communication Theory: General Survey: Major communication trends from classical era to the present. Comparison of Aristotelian and non-Aristotelian rhetorics. Contributions of principal figures will be discussed.
- COM 572** 4 (4,0)
Rhetoric of Social and Political Action: PR: Junior Standing. A critical investigation of social and political speaking within contemporary American society including agitative rhetoric of social and political dissent.
- COM 602** 4 (4,0) F
Modern Communication Theory: Comparative analysis of theories and models of human communication: behavioral systems, encoding and decoding processes, interaction variables, and social context.
- COM 603** 4 (4,0) W
Information and Educational Systems: PR: C.I. Sources, processing and transmittal of educational and informational materials (software) used in educational broadcast systems, information retrieval systems, learning machines, etc.
- COM 605** 1-15 (0,1-15)
Clinical Practice in Language and Speech Pathology: PR: COM 405 and C.I. Advanced clinical practice in diagnosis and treatment of communicative disorders. May be repeated with change of content, not to exceed a total of 15 hours.
- COM 612** 4 (4,0) W
Comparative International Communication Organizations: A study of the principal mass communication organizations of the world.
- COM 613** 4 (4,0)
Communication and Society: The importance of communications in societal stress situations, with emphasis on current problems.
- COM 617** 4 (4,0)
Governmental Public Relations: PR: C.I. Emphasis study of campaign planning, image and public affairs activities of political aspirants and executive governmental offices at the city, county, state and federal levels.
- COM 620** 4 (4,0)
Studies in Persuasion: Survey and evaluation of experimental research in persuasion.
- COM 621** 4 (4,0)
Persuasion in the Media: Study of persuasive campaign with focus upon ethics, methodology, and strategies toward accomplishing the communication end.
- COM 622** 4 (4,0) W
Small Group Communication: PR: C.I. A study of communication and its effect on small group behavior.
- COM 625** 4 (4,0)
Problems in Broadcast Journalism: PR: C.I. Analysis of electronic journalistic policies, sources and control of information.

COM**COMP**

COM 628 4 (4,0)
Audience Measurement: PR: C.I. Examination and review of audience measurement techniques. Individual assignments for compilation and analysis of measurement data.

COM 630 4 (4,0)
Communications Management: PR: C.I. Analysis and developments, with reference to particular media. Organizational theory, structure and behavior. Management principles and operations.

COM 635 4 (4,0) W
Legal Aspects of Mass Communication Law: PR: C.I. Further study into the legal rights and restrictions affecting the mass media.

COM 640 4 (4,0) W
Effects of Advertising on Society: An in-depth study of advertising's effects on consumer behavior, societal mores and media economics.

COM 645 3 (3,0)
Speech of the Laryngectomee: PR: C.I. Basic principles and practice for developing and improving the speech of the laryngectomee.

COM 646 4 (4,0)
Aphasia: PR: C.I. Etiology, diagnostic techniques and management of the adult aphasic patient.

COM 647 4 (4,0)
Auditory Amplification: Physical characteristics and clinical aspects of auditory amplifiers for the hearing handicapped. Clinical observations required.

COM 649 4 (4,0)
Industrial Audiology: PR: C.I. A study of the problems of noise pollution in the community. Emphasis is placed upon psychological and physiological problems associated with noise. Noise studies performed.

COM 660 4 (4,0) W
Advanced Studies in Communicative Disorders: Articulation: Specific diagnostic techniques and therapeutic procedures for articulation disorders.

COMPUTER SCIENCE

COMP 101 4 (4,0) F,W,S
Introduction to Computer Science: History, typical computer; elements and symbology; number systems; arithmetic operations; control and data flow; peripheral components; memory devices; case study of an application of computers.

COMP 102 3 (3,0) F,W,S
Computer Programming: PR: MATH 110 or the equivalent. Problem definitions, algorithms, flow charts, digital computer programming using a higher level language (FORTRAN).

COMP 205 3 (3,0) F,W,S
Algorithmic Process I: PR: MATH 110 or equivalent. Use of computers, problem solving, algorithms, computer organization, assignment statements, data types, input/output, program logic, looping, arrays, selected projects.

COMP 206 3 (3,0)
Algorithmic Processes II: PR: COMP 205. Computing systems, procedures, storage allocation, parameter access, recursion, debugging techniques, selected projects.

COMP 301**3 (3,0)**

Computing Processes: PR: At least one programming course. An accelerated course in algorithmic and computing concepts for the student with significant knowledge of at least one programming language. Credit may not be earned in both COMP 301 and the COMP 205, 206 sequence.

COMP 302**3 (3,0)**

Programming and Numerical Methods: CR: MATH 322. FORTRAN, approximations, numerical applications.

COMP 303**3 (3,0) F,W,S**

Computer Fundamentals for Business Application I: History of computers; processing information; manual information processing systems; introduction to electronic computer systems; storage of information; solving problems; preparation of common business reports.

COMP 304**3 (3,0)**

Computer Fundamentals for Business Applications II: PR: COMP 303 or equivalent. Introduction to business systems, business parameters, information flow, business data processing terminology, program creation, documentation, and operations orientation.

COMP 305**4 (4,0)**

Assembly Language Programming Laboratory: PR: COMP 206 or COMP 301 or COMP 302. Computer structure and assembly language.

COMP 306**4 (4,0)**

Computers and Programming: PR: COMP 305 and COMP 307. Computer systems organization, micro-programming, symbolic assembly systems, macros, program segmentation and linkage, systems and utility programs, selected projects using a mini-computer.

COMP 307**3 (3,0)**

Algorithmic Processes III: PR: COMP 206 or COMP 301. Strings, lists, trees, graphs, files, job control language, numeric and non-numeric applications, selected projects.

COMP 310**3 (3,0)**

Business Data Processing Software Survey: PR: COMP 304. Introduction to functional characteristics of problem-oriented languages. COBOL, PL/1, RPG, FORTRAN, BASIC, APL. Overview of functional operating systems.

COMP 311**3 (3,0)**

Analysis of Computer Systems and Hardware Capabilities: PR: COMP 304. Characteristics of computers and related equipment from business usage standpoint. Techniques of measuring hardware and system performance, benchmarking, task mix parameters, simulation and configuration analysis.

COMP 331**4 (4,0)**

Discrete Structures in Computer Science: PR: COMP 307, MATH 271 and a course in statistics. Recursion; algorithms for listing permutations, combinations, samples, and selections; Markov algorithms; theory of directed and undirected graphs; applications to computer science.

COMP 340**3 (3,0)**

Data Structures and Operating Systems for Business: PR: COMP 304. Examination of data set structures and relations to file activity. Operating system services, multiprogramming, accounting, background-foreground processing, overhead cost analysis.

COMP 361**4 (4,0)**

Numerical Calculus: PR: COMP 206 and MATH 324. Numerical solution of algebraic and

transcendental equations, systems of equations, ordinary differential equations, FORTRAN.

COMP 387 **3 (3,0)**

Computer Programming with Business Applications: PR: Any COMP Course. COBOL programming, RPG, data processing applications.

COMP 401 **4 (4,0)**

Computer Organization I: PR: COMP 306, EECS 311. Processor characteristics, peripheral equipment characteristics, information representation, introduction to data communications.

COMP 405 **4 (4,0)**

Data Structures: PR: COMP 305 and COMP 307. Basic concepts of data; linear lists, strings, arrays, and orthogonal lists; ordering or sorting techniques; recursion; string and list processing languages.

COMP 408 **4 (4,0)**

Programming Languages I: PR: COMP 307. Formal definitions of programming languages, global properties of algorithmic languages.

COMP 411 **4 (4,0)**

Systems Programming I: PR: COMP 306 and COMP 405. Task scheduling, file management, file security, multi-programming, communication between system components, system logs and accounting and status reporting.

COMP 481 **4 (4,0)**

Computer Processing of Statistical Data: PR: STAT 402 and knowledge of FORTRAN, or C.I. Use of computers in statistical analysis; error analysis; Monte Carlo calculations; simulation; matrix calculations; regression; nonlinear estimation; principal components; factor analysis; analysis of variance/covariance.

COMP 484 **3 (3,0) W**

Health Information Systems: PR: COMP 303. Survey of the current health information systems, application of automated data processing techniques to the health field, manual systems needed to support them.

COMP 487 **3 (3,0)**

Computer Processing of Business Data I: PR: Junior standing and COMP 303. Computers in business data processing; applications in accounting, payroll, inventory control, and production control; file organization, development, and control; on-line systems and controls.

COMP 488 **3 (3,0)**

Computer Processing of Business Data II: PR: COMP 487. Continuation of COMP 487.

COMP 489 **3 (3,0)**

Computer Processing of Business Data III: PR: COMP 488. Continuation of COMP 488.

COMP 501 **3 (3,0)**

Digital Computing: MATH 323. Digital computer programming; internal operation of the computer; current developments in programming languages and computers. Intended for secondary school mathematics teachers.

COMP 503 **4 (4,0)**

Hardware Concepts: PR: COMP 511 or equivalent. Storage organization and searching, logic, data-flow, computer architecture.

COMP 505 **4 (4,0)**

Algorithmic Concepts: PR: Acceptance into a graduate program. Computer organization, flow-charts, computing systems, errors, data structures, selected projects using PL/1.

COMP

COMP

- COMP 508** 4 (4,0)
Programming Languages II: PR: COMP 408. List Processing, string manipulation, data description, and simulation languages.
- COMP 511** 4 (4,0)
Software Concepts: PR: COMP 505 or equivalent. Machine and assembly language, micro-programming, systems and utility programs, data structures.
- COMP 521** 3 (3,0)
Compiler Structure I: PR: COMP 405 and COMP 408. Syntax analysis; bootstrapping and metacompilers; languages for compiler writing, storage allocation, mapping, dynamic allocation; scanners; symbol tables; code emitters; one-pass and multi-pass systems; code optimization.
- COMP 522** 3 (3,0)
Compiler Structure II: PR: COMP 521. Continuation of COMP 521.
- COMP 561** 4 (4,0)
Numerical Analysis I: PR: COMP 361 and MATH 317. Fixed-point interaction, matrix computations, interpolation, error analysis, differentiation and integration, solution of systems of ordinary differential equations.
- COMP 565** 4 (4,0)
Scientific Applications Concepts: PR: COMP 505 or the equivalent; and MATH 324. Use of computers in science and engineering, techniques and applications.
- COMP 585** 4 (4,0)
Commercial applications Concepts: PR: Acceptance in a graduate program. Automated business systems and their definition.
- COMP 601** 4 (4,0)
Computer Organization II: PR: COMP 503 or the equivalent. Computer system design problems, memory utilization, storage management, addressing, control and input-output, specific examples of computer architecture, array computers, variable structure computers.
- COMP 602** 4 (4,0)
Computer Organization III: PR: COMP 601. Continuation of COMP 601.
- COMP 605** 3 (3,0)
Economics of Computers: PR: COMP 585 and a course in microeconomics; or C.I. The computer industry, terms and conditions of sale and rental, cost and effectiveness of computer systems, pricing computer services.
- COMP 607** 3 (3,0)
Philosophy of Programming: PR: 8 hours of programming. Program organization, structured programming and allied topics, case studies and projects.
- COMP 611** 4 (4,0)
Systems Programming II: PR: COMP 503 and 511; or equivalent. Batch process systems, parallel processing, multiprogramming and multiprocessing, user services and facilities.
- COMP 612** 4 (4,0)
Systems Programming III: PR: COMP 611. Continuation of COMP 611.
- COMP 615** 3 (3,0)
Simulation of Computer Systems: PR: COMP 511 or equivalent; and IEMS 620. Application of system methodology to hardware and software systems.

- COMP 617** 4 (4,0)
Information Organization and Retrieval: PR: COMP 511 or the equivalent. Models for structured information, analysis of information content, automatic retrieval systems, evaluation of retrieval effectiveness.
- COMP 618** 3 (3,0)
Computer Graphics Systems: PR: COMP 511. Systems software and data structures for graphics devices and display processors.
- COMP 651** 3 (3,0)
File Systems: PR: COMP 601 and COMP 611. Functions of file systems, file system organization and structure, analysis of file systems, data management systems.
- COMP 653** 3 (3,0)
Computer-Based Communications Networks: PR: COMP 585 or the equivalent. Functions of communications systems, communication system hardware, communication system organization and structure, examples.
- COMP 655** 3 (3,0)
Information Analysis: PR: COMP 585 or the equivalent. Determination of information requirements and alternatives, basic tools.
- COMP 656** 3 (3,0)
Information System Design: PR: COMP 655. Tools and objectives, hardware/software selection and evaluation, data base development, program development, system implementation, post implementation and analysis. This course emphasizes the distributed processing approach.
- COMP 661** 4 (4,0)
Numerical Analysis II: PR: COMP 561. Mathematically stability and ill-conditioning, discretization error, convergence of iterative methods, rounding error.
- COMP 681** 3 (3,0)
Managing the Computer Professional: PR: COMP 585 and MGMT 501; or C.I. The programming group, team and project tasks, personality factors, motivating, training, experience.

COOPERATIVE EDUCATION

- COED 100** 0*
 Cooperative Education, Freshman Year
- COED 200** 0*
 Cooperative Education, Sophomore Year
- COED 300** 0*
 Cooperative Education, Junior Year
- COED 400** 0*
 Cooperative Education, Senior Year
- *May be repeated

CRIMINAL JUSTICE

- CRJ 201** 4 (4,0) F,S,Su
Law Enforcement: A comprehensive survey of the history and philosophy of law enforcement. The role of the police in the system of criminal justice will be emphasized.

- CRJ 207** 4 (4,0)
Criminal Investigation: A comprehensive survey of the modern methods and procedures used in the investigation and solution of criminal offenses.
- CRJ 300** 4 (4,0) F,Su
Crime in America: A survey of crime and criminality in the United States with emphasis on crime data and its weaknesses, theories of causation, and types of criminal behavior.
- CRJ 301** 4 (4,0) F,S
Criminal Law in Action: Basic concepts of criminal law, their origin and development; constitutional and procedural rules; and Federal and State relations in the administration of justice.
- CRJ 302** 4 (4,0) F,W,S
Administration of Justice: The broad system of criminal justice in America, and examination of various goals and conflicts present within law enforcement, court and corrections sub-systems.
- CRJ 303** 4 (4,0) W
Municipal Police Administration: PR: CRJ 201. Advanced study of contemporary operational concepts of administration with an emphasis on function, rather than structure.
- CRJ 304** 4 (4,0) F
The Police Managers: PR: C.I. Elements of first-line supervision and executive development. Administrative leadership; its situational nature; methods and traits; recent theories and research on leadership.
- CRJ 305** 4 (4, 0)
Justice of Manpower for Science and Technology: Study of both operational and management concepts of various related investigative technological and scientific professions, and the relationship between justice programs and criminal events.
- CRJ 310** 4 (4,0) F,W,S
The Correctional and Penal Systems: Theories, structures and methods of institutions and noninstitutional services in the correctional rehabilitation of criminal and juvenile offenders.
- CRJ 311** 4 (4,0) F
Probation and Parole: Analysis of probation and parole services and systems: the organization, administration and management of treatment and field services for various types of public offenders.
- CRJ 400** 4 (4,0) F
Police and the Community: Police relationships with citizenry. Ethnic and social conflict in relation to law enforcement, and how police deal with groups, crowds, gangs and non-conformist cultures.
- CRJ 407** 4 (4,0) W
Comparative Justice Systems: A survey of contemporary foreign criminal justice systems, operational and philosophical differences emerging from various cultural and legal systems.
- CRJ 410** 4 (4,0) S
Financial Administration and Budgeting: PR: C.I. Police budgets as instruments of policy making and management. Financial, fiscal, administrative and legal aspects of budgeting.
- CRJ 411** 4 (4,0) Su
Justice Policy and Social Conflict: The effects of social conflicts and political decisions upon the administration of justice, especially the role assigned law enforcement in dealing with social problems.

CRJ 422

4 (4,0) W

Delinquency Control: Examination of programs and institutions including juvenile court process, intake services, juvenile bureau administration, youth authority programs and drug abuse control.

CRJ 423

4 (4,0) S

Corrections Administration: Organization, administration and operation of short and long term detention facilities or institutions including classification, treatment, security, supervision and prison sub-culture problems.

E

ECONOMICS

ECON 201

3 (3,0) F,W,S,Su

Fundamentals of Economics: An introductory course designed to provide the nonbusiness student with a terminal course in the fundamentals of economics. Not open to business majors.

ECON 202

4 (4,0) F,W,S,Su

Principles of Microeconomics: The determination of prices in a market economy; their role in allocating consumer and producer goods and in distributing incomes. Efficiency of markets and evaluation of public policies designed to improve efficiency.

ECON 203

4 (4,0) F,W,S,Su

Principles of Macroeconomics: PR: ECON 202. A study of national income accounting, income and employment theory, business fluctuations, money and banking, and monetary and fiscal policy in the U.S. economy.

ECON 301

4 (4,0) F,W,S,Su

Intermediate Price Theory: PR: ECON 202 and ECON 203. Theoretical analysis of the determination of product and factor prices under different market structures.

ECON 307

4 (4,0) F,W,S,Su

American Economic History: An introduction to the economic development of the United States with emphasis upon agriculture, labor, industrialization, transportation, and banking. (Same as HIST 311).

ECON 311

4 (4,0) F,W,S,Su

Intermediate Money, Income and Employment Theory: PR: ECON 202 and ECON 203. Theoretical analysis of the determination of national income and employment, including an examination of the monetary system.

ECON 321

4 (4,0) F,W,S,Su

Quantitative Methods and Business Decision Analysis: PR: STAT 301. The use of statistical methods as scientific tools in the analysis of economics and business problems to aid in the process of decision making.

ECON 328

3 (3,0)

Transportation Economics: PR: ECON 202 or 203. Economic characteristics and governmental regulation of public carriers. Consideration of competitive relations between modes of transportation and criteria for public investment in transportation and criteria for public investment in transportation systems.

- ECON 331** 3 (3,0)
Economics of Labor: PR: ECON 202 and ECON 203. A survey of the growth, structure, objectives, and collective bargaining practices of organized labor groups.
- ECON 332** 3 (3,0)
Manpower and Human Resources: PR: ECON 202 and ECON 203. Examines labor as a human resource or human capital. Special emphasis placed upon the changing role of manpower and manpower policies.
- ECON 341** 3 (3,0)
International Economics: ECON 202 and ECON 203. Fundamental principles of international trade and foreign exchange, including the balance of payments and problems of foreign economic policy.
- ECON 381** 3 (3,0)
Economics of Public Utilities: PR: ACCY 211 and ACCY 212 or ACCY 300, and ECON 202, ECON 203 or C.I. The nature of public utilities, the economics of rate determination, and regulatory policy.
- ECON 401** (3,0)
Managerial Economics: PR: ECON 202 and ECON 203. The uses of economic analysis in economic decision-making and business policy formulation.
- ECON 411** 3 (3,0)
Comparative Economic Systems: PR: ECON 202 and ECON 203. An analysis of the fundamental institutions of the American economic system and a comparison of the American economic system with other economic systems.
- ECON 421** 3 (3,0)
Economic Statistical Analysis: PR: ECON 321. Concepts and methods of developing, analyzing and interpreting measures of economic activity, and business and economic change.
- ECON 431** 3 (3,0) F,W,S,Su,
Public Finance in the American Economy: PR: ECON 202 and ECON 203. Analysis of fiscal institutions and decision-making in the public sector of the American economy; budget planning and execution, taxation, debt; and theory of taxes.
- ECON 435** 3 (3,0)
Monetary Theory and Policy: PR: FIN 331. A study of the factors that influence the supply of and demand for money and credit, and the effect of changes in these factors on the allocation of resources, levels of national income, employment, and prices.
- ECON 441** 3 (3,0)
Economic Development: PR: ECON 202 and ECON 203. The processes and problems of economic development.
- ECON 461** 3 (3,0)
Business and Government: PR: ECON 202 and ECON 203. A survey of the most significant public policies affecting business firms.
- ECON 471** 3 (3,0)
History of Economic Thought: PR: ECON 202 and ECON 203. A study of the leading ideas of the major contributors to the development of economic thought.
- ECON 501** 4 (4,0)
Economic Concepts: PR: Acceptance into the M.B.A. Program. Introduction to economic analysis, including the theory of the market; supply, demand and price determination; income

distribution; aggregate income and employment determination.

ECON 521 **4 (4,0)**

Statistics for Business and Economics: PR: Acceptance into the M.B.A. Program. Statistical theory and problems relating to business and economics including time series and correlation theory, index number theory and statistical inference.

ECON 523 **3 (3,0)**

Econometric Methods: PR: Graduate standing and ECON 321 or equivalent. The application of econometric methods to economic theory and problems. Emphasis is placed on the validation of a model.

ECON 525 **3 (3,0)**

Mathematical Economics: PR: ECON 203 and MATH 223. An introduction to the mathematical tools of modern economic analysis.

ECON 551 **3 (3,0)**

Economics of Urban Areas: PR: ECON 202 and ECON 203. An analysis of the economic problems arising from and associated with the growth of cities and suburban areas within metropolitan districts.

ECON 601 **3 (3,0)**

Economic Analysis of the Firm: PR: Graduate Standing and ECON 501 or equivalent. Commodity price and output determination; factor price determination and functional income distribution; analysis of different types of markets.

ECON 602 **5 (5,0)**

Price Theory: PR: Graduate standing and ECON 301 or equivalent. An analysis of the theory of consumer choice, the theory of the firm, and the theory of distribution.

ECON 611 **3 (3,0)**

Aggregate Economics-Income, Unemployment and Growth: PR: Graduate standing and ECON 501 or equivalent. Macroeconomic measurement, theory and policy, designed specifically for the student who possesses a limited grasp of economic analysis.

ECON 612 **5 (5,0)**

Macroeconomic Theory: PR: Graduate standing and ECON 311 or equivalent. An analysis of the nature and determinants of aggregate output, employment, income, and spending with specific emphasis on the achievement of economic stability.

ECON 621 **3 (3,0)**

Statistical Models for Business: PR: Graduate Standing and ECON 521 or equivalent. The theory of model analysis including the validation of model assumptions through Monte Carlo analysis and advanced statistical techniques.

ECON 622 **5 (5,0)**

Statistical Analysis of Economic Data: PR: Graduate standing and ECON 321 or equivalent. A study of the concepts and methods of developing, analyzing, and interpreting measures of economic activity.

ECON 631 **3 (3,0)**

Public Finance and Financial Policy: PR: Graduate Standing and ECON 501 or equivalent. Analysis of the fiscal role and instruments of government and their effects on the economy; taxation, debt, and fiscal policy.

ECON 635 **3 (3,0)**

Money, Banking and Economic Activity: PR: Graduate Standing. A study of the institutions in which the money supply is generated and the influence of monetary policy on economic

stability and growth.

ECON 636 3 (3,0)

Monetary Theory and Policy: PR: Graduate standing and a course in Money and Banking. An analysis of the fundamental theory underlying the supply of money, demand for money and effects of monetary variables on the level of economic activity.

ECON 641 3 (3,0)

Theory of International Finance and Monetary Institutions: PR: Graduate standing. Analysis of the international money market, international equilibrium and adjustment mechanism, exchange rate variations, balance of payments, capital flows, and effects of international monetary policies.

ECON 642 3 (3,0)

International Trade: PR: Graduate standing. An inquiry into the theory of international trade, commercial policy and economic integration.

ECON 645 3 (3,0)

Economic Development: PR: Graduate standing. Analysis of theories and problems of growth and development with special attention to resource scarcity, population growth, and interaction of foreign trade and internal development.

ECON 647 3 (3,0)

The Economics of Central Planning: PR: Graduate standing. An analysis of the economics of planning as applied to the economy of the Soviet Union and Soviet type centrally planned economic systems.

ECON 655 3 (3,0)

Environmental Economic Analysis: PR: Graduate standing. An investigation of environmental problems, methods of economic analysis, policies of environmental protection, and difficulties in making quantitative assessments of environmental damages.

ECON 661 3 (3,0)

Labor Economics: PR: Graduate Standing and ECON 501 or equivalent. An investigation into the nature and function of the labor markets, with specific concern for both institutional and non-institutional imbalance.

ECON 671 3 (3,0)

History of Economic Thought: PR: Graduate standing. The history and development of Pre-Keynesian economic doctrines with emphasis on classical and post-classical economic thought.

ECON 681 3 (3,0)

The Economics of Regulated Industries: PR: Graduate standing. Economic, legal, and administrative concepts of regulation with emphasis on goals, tasks, phases, and procedures of regulation pertaining to transportation, electric, gas, and communications systems.

ECON 683 3 (3,0)

Industrial Organization and Performance: PR: Graduate standing. A study of the performance of industries representative of various types of market structures and practices, relative to price and efficiency.

EDUCATION, ADMINISTRATION AND SUPERVISION

EDAD 601 5 (5,0)

Organization and Administration of Schools: PR: Rank III Certificate or C.I. School organizational patterns kindergarten through junior college. Study of functions such as

scheduling, staffing, community relations, design and operation of facilities, financial management.

EDAD 602 **5 (5,0)**

Organization and Administration of Instructional Programs: PR: Rank III Certificate or C.I. Purpose and functions of school learning centers, curricula, media, and establishment of educational priorities; review and analysis of various grouping patterns for individualizing instruction.

EDAD 603 **4 (4,0)**

Legal Aspects of School Operation: PR: Rank III Certificate or C.I. Study of state and federal laws affecting the operation of public schools emphasizing individual rights and responsibilities of students, faculty, and administrators.

EDAD 611 **4 (4,0)**

Educational Supervisory Functions: PR: Rank III Certificate or C.I. Analysis of school supervisory functions in human relations, leadership, personnel administration, and in-service education for instructional improvement.

EDAD 612 **5 (5,0)**

Educational Supervisory Techniques: PR: Rank III Certificate and EDAD 611. Development of techniques in observation, group processes, communication, and evaluation for assessment of school personnel and programs.

BUSINESS EDUCATION — DEVELOPMENTAL

EDBE 101 **3 (3,1) F,W,S**

Introductory Typewriting: For the student with no previous instruction in typewriting. Development of basic elements in using the typewriter as a tool of literacy and communications.

EDBE 102 **3 (3,1) F,W,S**

Typewriting Production I: PR: EDBE 101 or equivalent. Continuation of development of skills in speed and accuracy and introduction to skill building procedures in communications production.

EDBE 103 **3 (3,1) F,W,S**

Typewriting Production II: PR: EDBE 102 or equivalent. Expansion of communications production development, speed and accuracy.

EDBE 201 **3 (3,1)**

Principles of Shorthand I: PR: Concurrent enrollment in EDBE 101 or equivalent. For students with no previous instruction in shorthand. Introduction to basic theory of Gregg Shorthand, vocabulary development, and speed building.

EDBE 202 **3 (3,1)**

Principles of Shorthand II: PR: EDBE 102 and EDBE 201 or equivalents. A continuation in the study of shorthand theory, vocabulary development, and speed building.

EDBE 203 **3 (3,1)**

Principles of Shorthand III: PR: EDBE 102 and EDBE 202 or equivalents. Development and refinement of sustained shorthand dictation, speed, and vocabulary.

EDBE 301 **3 (3,1)**

Shorthand Dictation: PR: EDBE 102 and EDBE 203 or equivalents. Continued development of shorthand dictation and introductory communications production.

- EDBE 302** 3 (3,1)
Shorthand Transcriptions: PR: EDBE 102 and EDBE 301. Gregg Shorthand dictation and refinement of communications production.
- EDBE 305** 3 (3,1)
Office Technology: PR: EDBE 102 or C.I. Basic operation and function of technological media in modern business offices.
- EDBE 406** 3 (3,0)
Office Systems and Procedures: PR: EDBE 302. Study of the responsibilities of the executive secretary and office supervisor; records management, travel services, case studies in human relations in executive level job performance.
- EDBE 601** 3 (3,0)
Curriculum Innovations in Business Education: PR: Rank III Certificate or C.I. A critical analysis of the business curricula in post secondary schools; development of philosophy, objectives and design of innovative programs in business.
- EDBE 602** 3 (3,0)
Problems, Issues, and Trends in Business Education: PR: Rank III Certificate or C.I. Historical development; fundamentals of business education; its relation to business, vocational and general education, guidance, objectives and contemporary problems.
- EDBE 603** 3 (3,0)
Analysis, Trends and Research in Typewriting Instruction: PR: Rank III Certificate or C.I. Techniques, materials, and instructional media; psychological principles, evaluation, and special attention to a study of research and new trends of instruction.
- EDBE 604** 3 (3,0)
Evaluation in Business Education: Rank III Certificate or C.I. A study of standardized and prognostic business education tests; functions, construction, administration, and evaluation of measurement instruments.
- EDBE 610** 3 (3,0)
Administration and Supervision of Business Education: PR: Rank III Certificate or C.I. Organization, administration, and supervision of Business Education.
- EDBE 611** 3 (3,0)
Analysis of Instruction in Shorthand and Transcription: PR: Rank III Certificate or C.I. Techniques, materials, and instructional media; psychological principles, evaluation, and special attention to a study of research and new trends of instruction.
- EDBE 612** 3 (3,0)
Analysis of Instruction in Office Technology: PR: Rank III Certificate or C.I. Techniques, materials and instructional media; psychological principles, evaluation, and special attention to a study of research and new trends of instruction.
- EDBE 613** 3 (3,0)
Analysis of Instruction in Basic Business and Accounting: PR: Rank III Certificate or C.I. Techniques, materials, and instructional media; psychological principles, evaluation, and special attention to a study of research and new trends of instruction.
- EDBE 614** 3 (3,0)
Coordination of Cooperative Office Business Education: PR: Rank III Certificate or C.I. A study of cooperative programs; organization and coordination of cooperative business education programs.

EDBE 615

3 (3,0)

Improvement of Related Instruction in Cooperative Business Education: PR: Rank III Certificate or C.I. Techniques, materials, and instructional media; psychological principles, evaluation, and special attention to the study of research and new trends of instruction in related cooperative education study.

ELEMENTARY EDUCATION — DEVELOPMENTAL

EDEL 301

3 (2,1) F,W,S

Teaching Mathematics in the Elementary School: PR: Admission to Phase II or C.I. Consideration of selected concepts; organizing for instruction, techniques and activities; class and individual diagnosis; remedial procedures.

EDEL 302

3 (2,1) F,W,S

Mathematics Programs in the Elementary School: PR: EDEL 301. Analysis of teaching arithmetic, geometry and measurement; philosophy and objectives; instructional materials; current research and new curricula.

EDEL 306

4 (2,2) F,W,S,Su

Music in the Elementary School: Fundamental procedures for teaching elementary school music, stressing appropriate music materials and activities for different age groups; selected experiences in music.

EDEL 307

4 (4,0) F,W,S,Su

Literature for Children: PR: Admission to Phase II or C.I. General survey of books and materials; criteria for analysis and evaluation; types of books available considered in terms of interests, needs, and abilities of children.

EDEL 311

3 (3,0) F,W,S

Basic Foundations of Reading: PR: Admission to Phase II or C.I. Introduction to reading; principles, procedures and organization, current practices; analysis of reading materials; correlation with child development; investigation of research.

EDEL 312

3 (3,0) F,W,S

Reading in the Elementary School: PR: EDEL 311. Study of specific techniques and materials used to develop reading comprehension vocabulary and rate; organizing and directing a reading lesson; individual differences; evaluation procedures.

EDEL 315

3 (3,0) F,W,S

Teaching Science in the Elementary School: PR: Admission to Phase II or C.I. Consideration of selected themes, problems, and concepts; organizing for instruction; techniques and activities; evaluation procedures.

EDEL 316

3 (3,0) F,W,S

Elementary School Curriculum: PR: Admission to Phase III or C.I. Basic scope and sequence of the elementary school curriculum; philosophical concepts; techniques and materials for instruction; patterns of organization; planning for instruction.

EDEL 317

3 (3,0) F,W,S

Teaching Social Science in the Elementary School: PR: Admission to Phase II or C.I. Consideration of selected themes, problems, and concepts; organizing for instruction; techniques and activities; evaluation procedures.

EDEL 318

3 (3,0) F,W,S

Teaching Physical Education in the Elementary School: PR: EDTA 206 and EDTA 307. Organization, practice, and conduct of elementary school physical education with emphasis on teaching methods.

- EDEL 405** 4 (4,0) F,W,S,Su
Language Arts in the Elementary School: PR: Admission to Phase II or C.I. Content, principles, materials and techniques involved in teaching speaking, listening, writing, and spelling in the elementary school; organizing for instruction.
- EDEL 406** 4 (2,2) F,W,S,Su
Art in the Elementary School: Basic principles, purposes, scope and sequence; organization for instruction; evaluation of activities; selected art experiences.
- EDEL 407** 3 (3,0) F,W,S,Su
Classroom Diagnosis and Treatment of Reading Difficulties: PR: EDEL 311 or EDEL 312 or equivalent. Principles and techniques of diagnosis and remedial teaching with the disabled reader; factors related to reading problems — physiological, psychological, cultural; materials for instruction.
- EDEL 408** 3 (2,1) F,W,S,Su
Science Programs in the Elementary School: PR: Admission to Phase II or C.I. Overview of the instructional program in natural sciences; philosophy and objectives; special problems; instructional materials; current research and new curricula.
- EDEL 409** 3 (3,0) F,W,S,Su
Social Science Programs in the Elementary School: PR: Admission to Phase II or C.I. Overview of the instructional program in the social sciences; philosophy and objectives; special problems; instructional materials; current research and new curricula.
- EDEL 415** 3 (2,1) F,W,S,Su
Teaching Elementary School Health and Physical Education: PR: Admission to Phase II or C.I. Observation, organization, practice, and conduct of health and physical education activities in the elementary school.
- EDEL 460** 4 (4,0) F
Principles and Programming in Early Childhood Education: PR: C.I. Consideration of basic concepts, goals and principles underlying program planning; trends in research and development. Concurrent laboratory experiences.
- EDEL 461** 4 (4,0) W
Curriculum in Early Childhood Education: PR: C.I. Exploration of early childhood curriculum: organizing for instruction; selection of appropriate objectives and activities in developing a balanced program. Concurrent laboratory experiences.
- EDEL 462** 4 (4,0) S
Creativity in Nursery-Kindergarten Education: PR: C.I. Emphasizes using art and music activities in the early childhood education program to stimulate and develop individual creativity.
- EDEL 482** 3 (3,0) F,W,S,Su
Drug Abuse Education: PR: C.I. Study of developments relating to drug abuse in contemporary society. Objectives, content, resources, and techniques of drug abuse education.
- EDEL 524** 3 (3,0)
Teaching the Metric System: PR: Rank III Certificate or C.I. Linear, area, volume, mass, force, and temperature measures from the metric system will be studied in relation to teaching aids, methods, and content. (K-12)
- EDEL 530** 4 (4,0)
Developmental Reading: PR: Rank III Certificate or C.I. Principles, procedures, organization, and current practices in the elementary reading program.

- EDEL 535** **3 (3,0)**
Classroom Diagnosis and Treatment of Reading Difficulties: PR: EDEL 530 or equivalent. Principles and techniques of classroom diagnosis and corrective teaching in reading. Consideration of instructional materials.
- EDEL 541** **3 (3,0)**
Science: A Process Approach (AAAS) as a Model program: PR: Rank II Certificate or C.I. Overview of general and special methods of science instruction; examines philosophy and materials of contemporary science programs; review curriculum development and curriculum change processes.
- EDEL 542** **3 (3,0) F,W,S,Su**
Individualizing instruction in the Elementary School: PR: Rank III Certificate or C.I. Study of basic philosophy, organizational patterns, techniques, materials, and activities related to individualizing instruction in the elementary school classroom.
- EDEL 560** **4 (4,0) F**
Programs in Early Childhood Education: PR: Rank III Certificate or C.I. Overview of the philosophy, content, facilities, instructional materials, and activities appropriate for children ages 3, 4, and 5; current research and new curricula. Concurrent laboratory experiences.
- EDEL 561** **4 (4,0) W**
Organization of Instruction in Early Childhood Education: PR: Rank III Certificate or C.I. Organization of instruction and techniques in areas relating to language arts, social sciences, science, mathematics, health and physical education; problems relating to reading readiness, perception and cognition. Concurrent laboratory experiences.
- EDEL 562** **4 (4,0) S**
Creative Activities in Early Childhood: PR: Rank III Certificate or C.I. Organization of instruction and methods of teaching music and art in early childhood education; emphasis on creative experiences with music and art. Concurrent laboratory experiences.
- EDEL 601** **5 (5,0)**
Elementary School Curriculum: PR: Rank III Certificate or C.I. Analysis of the forces which shape and contribute to the vertical and horizontal curriculum designs of elementary schools.
- EDEL 604** **3 (3,0)**
Leadership in Elementary Education: PR: Rank III Certificate or C.I. Current issues with emphasis on the improvement of instruction, analysis of curriculum, and staff development procedures.
- EDEL 605** **3 (3,0)**
Problems in Classroom Teaching in the Elementary School: PR: Rank III Certificate or C.I. Identification and analysis of relevant major instructional problems in the elementary school.
- EDEL 606** **3 (3,0)**
Curriculum Design in Elementary Education: PR: Rank III Certificate or C.I. Design and construction of programs to meet needs of varying levels of student populations. (May be repeated.)
- EDEL 610** **3 (3,0)**
Trends in Elementary School Science Education: PR: Rank III Certificate or C.I. Analysis of historical development and current trends in science education research.
- EDEL 620** **3 (3,0)**
Trends in Elementary School Mathematics Education: PR: Rank III Certificate or C.I. Analysis of historical development and current trends in mathematics education research.

- EDEL 621** **3 (3,0)**
Diagnosis of Difficulties in Elementary School Mathematics: PR: Rank III Certificate or C.I. The study of diagnosis of symptoms and causes of specific learning skills in mathematics, K-12.
- EDEL 622** **4 (4,0)**
Remediation of Difficulties in School Mathematics: PR: EDEL 621. Selection of materials and techniques for a remedial program in mathematics (K-12) based on individual diagnosis.
- EDEL 623** **4 (4,0)**
Practicum in Diagnosis and Remediation of difficulties in Mathematics, K-12: PR or CR: EDEL 621; CR, EDEL 622. Supervised diagnostic and remedial instruction with individual children; selection of instructional materials and techniques.
- EDEL 630** **3 (3,0)**
Trends in Elementary School Reading Education: PR: Rank III Certificate or C.I. Analysis of historical development and current trends in reading research.
- EDEL 632** **4 (4,0)**
Corrective Reading for Classroom Teachers I: PR: EDEL 535 or equivalent. A practicum for classroom teachers with emphasis on group diagnostic reading tests and classroom corrective techniques.
- EDEL 633** **4 (4,0)**
Corrective Reading for Classroom Teachers II: PR: EDEL 632 or equivalent. A continuation of EDEL 632.
- EDEL 635** **3 (3,0)**
Diagnosis of Difficulties in Reading: PR: EDEL 535 or equivalent. Administration and interpretation of individual tests. Consideration of physical, psychological and environmental factors contributing to reading difficulties.
- EDEL 636** **4 (4,0)**
Diagnostic Reading Practicum: PR: EDEL 635 or equivalent. Evaluation of reading abilities and difficulties of children in the reading laboratory of the University. Preparation of individual case reports.
- EDEL 637** **4 (4,0)**
Remedial Reading Practicum: PR or CR: EDEL 636. Supervised remedial instruction with individual children. Selection of instructional materials and techniques; preparation of case progress reports; parent interviews.
- EDEL 640** **3 (3,0)**
Trends in Elementary School Language Arts Education: PR: Rank III Certificate or C.I. Analysis of historical development and current trends in language arts research.
- EDEL 641** **3 (3,0)**
Investigation in Children's Literature: PR: Rank III Certificate or C.I. Analysis of the various approaches available for learning through the utilization of children's literature.
- EDEL 650** **3 (3,0)**
Trends in Elementary School Social Science Education: PR: Rank III Certificate or C.I. Analysis of historical development and current trends in social science education research.
- EDEL 681** **3 (3,0)**
Seminar in Early Childhood Education: PR: Rank III Certificate or C.I. Study and evaluation of research applicable to the design and construction of a curriculum for 3, 4 and 5 year old children.

EXCEPTIONAL CHILD EDUCATION

EDEX 401 4 (4,0) F,S

Introduction to Exceptional Children: PR: C.I. An overview of educational programs, teaching procedures and educational materials necessary to provide for the needs of exceptional students.

EDEX 402 4 (4,0) W,Su

Oral Communication Disabilities of Exceptional Children: PR: C.I. Identification and remediation procedures of communication disabilities, including the areas of speech, hearing, and language disorders.

EDEX 403 4 (4,0) W,Su

Mental Retardation: PR: C.I. An orientation to the meaning, the prevalence, the courses, and educational provisions for the mentally retarded child.

EDEX 404 4 (4,0) W,Su

Dimensions of Psycho-educational Appraisal: PR: C.I. Educational policies and procedures aimed at identification of exceptional children in the public schools; evaluation procedures for individual children.

EDEX 431 3 (3,0) F

Teaching Mentally Retarded Students: PR: C.I. Organizing for instruction: present day and emerging diagnostic and prescriptive teaching practices.

EDEX 432 3 (3,0) W

Curriculum and the Educable Mentally Retarded Child: PR: C.I. Curriculum content for the learning and motivational characteristics of the educable mentally retarded child.

EDEX 433 3 (3,0) W

Curriculum and the Trainable Mentally Retarded Child: PR: C.I. Curriculum content for the learning and motivational characteristics of the trainable mentally retarded child.

EDEX 501 4 (4,0)

Exceptional Children in the Schools: PR: Senior Standing or C.I. Characteristics, developmental patterns, educational problems, and appropriate educational programs for the exceptional child in Special Education.

EDEX 502 4 (4,0) W,Su

Educational Implications for the Speech and Language Disorders of Exceptional Children: PR: Rank III Certificate or C.I. Identification, evaluation, interpretation, and planning appropriate learning experiences to aid exceptional children with speech, hearing, and language disorders.

EDEX 503 4 (4,0) S

Fundamental Concepts of Mental Retardation: PR: Rank III Certificate or C.I. Characteristics, and symptom groupings, diagnostic procedures, learning characteristics, and educational treatment procedures of the mentally retarded.

EDEX 504 4 (4,0) W,Su

Psycho-educational Appraisal of Exceptional Children: PR: Rank III Certificate or C.I. Selection of performance objectives, diagnostic measures, prescriptive teaching programs, and progress evaluation procedures for individualizing instruction.

EDEX 531 3 (3,0)

Classroom Organization for Teaching the Mentally Retarded: PR: Rank III Certificate, EDEX 514 or C.I. Special class organization, scheduling, utilizing materials, equipment; analysis of instructional procedures for teaching mentally retarded.

EDEX 532 **3 (3,0)**
Curriculum Planning Procedures for the Educable Mentally Retarded: PR: Rank III Certificate or C.I. Appropriate curriculum experiences and adjustments; media use; develop pre-vocational skills of educable mentally retarded children.

EDEX 533 **3 (3,0)**
Curriculum Planning Procedures for the Trainable Mentally Retarded: PR: Rank III Certificate or C.I. Curriculum experiences, media use, pre-vocational skills development for developmental levels of trainable mentally retarded children.

EDEX 611 **3 (3,0)**
Homemaking and Social Learning Skills for the Mentally Retarded: PR: Rank III Certificate or C.I. Personal development and management in clothing maintenance and repair, cooking, the use of hand tools, and homemaking tasks.

EDEX 612 **3 (3,0)**
Occupational and Educational Information for Exceptional Children: PR: Rank III Certificate or C.I. World-of-work overview, occupational areas, occupational skills required for habilitative and rehabilitative community agencies for exceptional children.

EDEX 621 **3 (3,0) F,Su**
Theories of Learning Disabilities of School Children: PR: Rank III Certificate or C.I. An introduction to etiology of learning disorders, with emphasis on environmental deprivation, sensory development, and other impairment.

EDEX 622 **3 (3,0) W**
Instructional Diagnosis of the Learning Disabled Child: PR: Rank III Certificate or C.I. Evaluation techniques for diagnosing learning disabilities related to development in the basic school skills areas.

EDEX 623 **3 (3,0) S**
Individualized and Prescriptive Instruction for the Learning Disabled Child: PR: Rank III Certificate or C.I. Study of program innovations and prescriptive programming for pupils with learning disabilities.

EDEX 624 **3 (3,0) S,Su**
Behavior Management Techniques with Exceptional Children: PR: Rank III Certificate or C.I. Study of pupil management techniques, including group and individual procedures, for modifying the learning behavior of exceptional pupils.

EDUCATION — GUIDANCE

EDGU 511 **4**
Introduction to Guidance in Schools: PR: Completion of Phase II of Educ. Prof. Prep. or Rank III or C.I. A basic course presenting an overview of the philosophy, organization, administration and operation of guidance and pupil personnel services in the schools.

EDGU 612 **4**
Vocational and Career Development Procedures: PR: Rank III Certificate. Review of the forces which affect career choice and shape personal development. Emphasis on vocational counseling, career education, and parent-student-school interrelationships in making decisions.

EDGU 613 **4**
Group Procedures in School Guidance Counseling: PR: Rank III Certificate, EDGU 511 or EDGU 615, or C.I. Nature, theory, process of group counseling including study of dynamics related to change in values and behavior of children and adolescents; class demonstration and

practice.

EDGU 614 5

Counseling Practicum in Schools: PR: Rank III Certificate, EDGU 511, 613, 615 or C.I. Supervised counseling emphasizing competence in (1) individual counseling; (2) working with groups; (3) tests in educational-vocational-personal counseling.

EDGU 615 4

Theories and Techniques of Individual School Counseling: PR: EDGU 511 or C.I. Major theories and approaches to school counseling, correlating them with counterpart theories of personality and learning.

EDGU 620 4

Procedures for School Group Guidance Testing: PR: EDTA 612 or C.I. Survey of various educational and psychological objective instruments used in schools to measure achievement, aptitude, interests, ability. Emphasis on administration and score interpretation.

LIBRARY SCIENCE

EDLS 301 4 (4,0)

Foundations of Librarianship: PR: C.I. Survey of libraries and librarianship, origin, services, problems and current library literature. Library services on all levels and related terminology.

EDLS 321 4 (4,0)

Media Center Organization and Operation: PR: C.I. Principles in organizing library collections of books and non-book materials. Circulation of materials, statistical records and maintenance of collections in school media centers.

EDLS 380 3 (3,0) F,W,S

Library Resources and Materials: Use of the library, basic reference material, library services and research methods.

EDLS 421 4 (4,0)

Administrative Factors and Media: PR: EDLS 321. Involvement in planning, organizing, supervising and administering media centers.

EDLS 425 4 (4,0)

Administration of the Library Media Center: PR: EDLS 301. Principles and practices of administration applied to elementary and secondary school library media centers. Methods of teaching the use of the library.

EDLS 426 4 (4,0)

Cataloging and Classification: PR: EDLS 301. Cataloging and classification of library materials. Practical problems in descriptive cataloging, subject cataloging and the Dewey Decimal Classification as practiced in school media centers.

EDLS 431 4 (4,0)

Non-Book Materials in the Schools: PR: EDLS 426. Securing, processing and utilizing non-book materials in the schools.

EDLS 432 4 (4,0)

Acquisition and Processing Library Materials: PR: EDLS 321 or C.I. Searching, selecting, acquiring print and non-print materials.

EDLS 441 4 (4,0)

Reference Materials and Services: PR: C.I. Selection, evaluation and use of basic print and non-print reference materials.

- EDLS 451** 4 (4,0)
Utilization of Educational Media: PR: C.I. Principles and practices of communication theory and its application in the classroom. Emphasis on utilization and operation of the various classroom media.
- EDLS 452** 4 (4,0)
Instructional Media Production: PR: EDLS 451. Selection, evaluation and production of instructional materials with emphasis on projected materials, display and presentation techniques.
- EDLS 521** 4 (4,0)
Administrative Principles in Media Centers: PR: EDLS 321. Planning, organizing, directing, supervising and budgeting in school media centers. Personnel, public relations, and evaluating services. Planning buildings including equipment and furniture.
- EDLS 531** 4 (4,0)
Non-Book Materials: PR: EDLS 431. The function, evaluation, selection, preparation for use, cataloging and preservation of non-book materials.
- EDLS 532** 4 (4,0)
Acquisition of Library Materials: PR: EDLS 321 or C.I. Evaluation, selecting, and acquiring book and non-book materials. Selecting aids, reviewing media, publishers and jobbers. Procedures for budgeting, final records, gifts and exchanges.
- EDLS 541** 4 (4,0)
Government Publications: PR: EDLS 441. United States government publications, state and international documents. Selection, acquisition and use as sources of information for school media centers.
- EDLS 551** 4 (4,0)
Instructional Technology and the Curriculum: PR: EDLS 451. Use and selection of instructional materials as they apply to the curriculum in elementary and secondary schools.
- EDLS 611** 4 (4,0)
Seminar in Library Media: PR: EDLS 421, EDLS 431, and EDLS 441. Problems in the development of collections for children and young people, reluctant readers and the non-reader. Controversial aspects of book selection and censorship.
- EDLS 641** 4 (4,0)
Reference Sources: PR: EDLS 441. Selection, evaluation and use of advanced and specialized reference materials in various subject fields.

MUSIC EDUCATION

- EDME 401** 2 (2,0)
Elementary School Music Instructional Analysis: PR: EDTA 206 and EDTA 307. Instructional planning, sources of information, instructional techniques, evaluation, and organizational and administrative procedures in the elementary school music program.
- EDME 402** 2 (2,0)
Secondary School Music Instructional Analysis: PR: EDTA 206 and EDTA 307. Instructional planning, teaching techniques, evaluation procedures, sources of information and current trends in the general music program for middle, junior and senior high schools.
- EDME 403** 2 (2,0)
Instrumental Music Instructional Analysis: PR: EDTA 206 and EDTA 307. Organization and administration of the instrumental music program; sources of information, instructional aids

EDME**EDPE**

and materials, rehearsal procedures, conducting techniques, evaluation procedures, and performance considerations.

EDME 404 **2 (2,0)**

Vocal Music Instructional Analysis: PR: EDTA 206 and EDTA 307. Organization and administration of the vocal music program; sources of information, instructional materials, rehearsal procedures, conducting techniques, evaluation procedures, and performance considerations.

EDME 601 **3 (3,0)**

Foundations of Music Education: PR: Rank III Certificate or C.I. Examination of historical, philosophical and psychological foundations of Music Education.

EDME 602 **3 (3,0)**

Current Trends in Elementary School Music: PR: Rank III Certificate or C.I. Analysis of current materials, new programs and teaching techniques in elementary school music, emphasis on practical applications.

EDME 603 **3 (3,0)**

Current Trends in Secondary School Music: PR: Rank III Certificate or C.I. Analysis of current materials, new programs, and teaching techniques in secondary school music. Emphasis on practical application.

EDME 604 **3 (3,0)**

Problems in Music Education: PR: Rank III Certificate or C.I. A seminar approach for developing solutions to contemporary problems in music education. Current readings will be included.

EDME 610 **3 (3,0)**

Teaching Musicianship: PR: C.I. Materials and procedures in presenting aural and visual aspects of music; evaluation procedures.

PHYSICAL EDUCATION — DEVELOPMENTAL**EDPE 323** **2 (1,1) F,W,S,Su**

Instructional Analysis in Team Sports: PR: Sophomore standing. Analysis of neuromuscular performances and optimal approach to specific learning patterns in team sports.

EDPE 324 **2 (1,1) F,W,S,Su**

Instructional Analysis in Tennis: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.

EDPE 325 **2 (1,1) F,W,S,Su**

Instructional Analysis in Aquatics: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.

EDPE 326 **2 (1,1) F,S**

Instructional Analysis in Gymnastics and Tumbling: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific motor learning patterns.

EDPE 327 **2 (1,1) F,W**

Instructional Analysis in Golf: PR: Sophomore standing. Mechanical analysis of neuromuscular performances and optimal approach to specific learning patterns.

EDPE 328 **2 (1,1) F,S**

Instructional Analysis in Wrestling (M): PR: Sophomore standing. Mechanical analysis of

neuromuscular performances and optimal approach to specific learning patterns.

EDPE 329 2 (1,1) F,S
Choreography of Contemporary Dance (W): PR: Sophomore standing. Dance production as an art form.

EDPE 330 2 (1,1) F,W,S,Su
Instructional Analysis of Rhythmics: PR: Sophomore standing. Analysis of rhythm and rhythmic activities as they relate to teaching physical education.

EDPE 350 3 (2,1) F,W,S,Su
Coaching Theory: PR: EDPE 323. Theory and methods of coaching for optimum sports performances.

EDPE 360 3 (2,1) F,W,S,Su
School and Community Recreation: PR: Admission to Phase II or C.I. Knowledge and skills of after school activity and summer recreational programs.

EDPE 410 3 (2,2) F,W,S,Su
Kinesiomechanics: PR: ZOOL 324. Mechanics of human movement. Anatomical and mechanical analysis of motor tasks and individual performance. Laboratory experience in analytical and evaluative methods.

EDPE 421 4 (2,2) F,W,S,Su
Exercise Physiology — Cardiovascular: PR: ZOOL 324. A circulatory study of man's homeostatic regulation during environmental stress. (Includes lecture and laboratory.)

EDPE 422 4 (2,2) F,W,S,Su
Exercise Physiology — Respiratory: PR: ZOOL 324 and EDPE 421. A study of metabolic costs and respiratory adjustment to exercise.

EDPE 430 4 (2,3) F,S,Su
Human Performance Learning: PR: EDTA 306 or equivalent. Theories of movement and factors influencing the learning of gross and fine motor skills. (Includes lecture and laboratory.)

EDPE 440 3 (2,1) F,S,Su
Rehabilitation Training Techniques: PR: EDPE 410. Recognition and rehabilitation of sports injuries, including first aid.

EDPE 441 3 (2,1) Su
Adapted Physical Education: PR: EDPE 410 and EDPE 422. Principles and methods for adapting physical education activities and programs for atypical participants. Nature of typical specific disabilities.

EDPE 450 3 (3,0) F,W,S,Su
Organization and Administration of Physical Education: PR: EDSE 380 or EDEL 318. Administering and organizing for instruction of the physical education class and the total school physical education program.

EDPE 455 3 (3,0) W,Su
Coaching Problems: PR: EDPE 350. Identification, analysis, and evaluation of problems in athletic coaching.

EDPE 482 3 (3,0) W,Su
Measurement and Evaluation in Physical Education: PR: Jr. standing and completion of Phase I. Techniques of Measurement and evaluation in Physical Education.

EDPE 555 3 (3,0)
Professional Coaching Problems: PR: Rank III Certificate or C.I. A seminar approach to

problems and methods of coaching, including analysis of various philosophies.

EDPE 601 **3 (3,0)**

Philosophical Foundations of Physical Education: PR: Rank III Certificate or C.I. Analysis of the forces and events leading to the development of current concepts in physical education.

EDPE 602 **3 (3,0)**

Current Trends in Physical Education: PR: Rank III Certificate or C.I. A comprehensive review of the literature influencing trends in physical education.

EDPE 603 **3 (3,0)**

Organization and Design of Physical Education Programs: PR: Rank III Certificate or C.I. Study of physical education and its existing organization. Emphasis on ethics, values, principles and issues.

EDPE 604 **3 (3,0)**

Administration in Physical Education: PR: Rank III Certificate or C.I. Study of current problems in the administration of school physical education programs.

EDPE 621 **5 (3,2) Su**

Physiology of Exercise — Environmental: PR: Rank III Certificate or C.I. A study of physiological adaptation resulting from prescribed physical activity programs.

EDPE 624 **3 (2,1)**

Rhythmics: PR: Rank III Certificate or C.I. Instructional analysis in classical and modern rhythms.

EDPE 631 **5 (3,2) Su**

Motor Learning: PR: Rank III Certificate or C.I. A study of optimal human factors controlling performance.

EDPE 632 **3 (2,1)**

Perceptual Motor Development: PR: EDTA 614 or C.I. Study of the relationship between perceptual motor development and learning. Evaluation of physical activities designed to improve perceptual motor skills.

EDPE 660 **3 (3,0)**

School Recreation: PR: Rank III Certificate or C.I. A study of recreational programs related to the public schools.

EDPE 680 **3 (2,1)**

Kinesiological Analysis of Individual Activities: PR: Rank III Certificate or C.I. Analytical techniques of kinesiology and their methods of application to individual motor activities.

EDPE 681 **3 (2,1)**

Kinesiological Analysis of Team Activities: PR: Rank III Certificate or C.I. Analytical techniques of kinesiology and their methods of application to team motor activities.

EDPE 682 **3 (3,0)**

Measurement in Kinesiology and Physical Education: PR: Rank III Certificate or C.I. Techniques of measurement and evaluation of human performance and their applications to physical education.

EDPE 689 **4 (4,0)**

Special Readings: PR: EDTA 601, EDTA 612, and C.I. Comprehensive review of literature related to a selected topic in physical education: identification, analysis, and evaluation of developments, issues, and research problems.

PROFESSIONAL LABORATORY — APPLICATION

- EDPL 320** 3 (0,14) F,W,S
Elementary School Student Teaching - Block A: PR: EDTA 206 and EDTA 307. Junior year student teaching in an elementary school under the supervision of a certified classroom teacher.
- EDPL 321** 3 (0,14) F,W,S
Elementary School Student Teaching - Block B: PR: EDPL 320. Junior year student teaching in an elementary school under the supervision of a certified classroom teacher.
- EDPL 330** 3 (0,14) F,W,S
Secondary School Student Teaching - Block A: PR: EDTA 206 and EDTA 307. Junior year student teaching in a secondary school under the supervision of a certified classroom teacher.
- EDPL 408** 3 (3,0) F,W,S
Teaching Strategies: PR: Admission to Phase III. Seminar taken concurrently with student teaching exploring class management, aspects of professional and personal development, and current school problems and possible solutions.
- EDPL 421** 9 (0,30) F,W,S
Elementary School Student Teaching - Block C: PR: EDPL 321. Senior year student teaching in an elementary school under the supervision of a certified classroom teacher.
- EDPL 430** 9 (0,30) F,W,S
Secondary School Student Teaching - Block C: PR: EDPL 330. Senior year student teaching in a secondary school under the direction of a certified classroom teacher.
- EDPL 450** 2-12 (0,2-12)
Direct Field Experience: PR: Approval of Professional Laboratory Chairman. Field experience in an appropriate educational setting under the direction of a supervising teacher and/or university supervisor.
- EDPL 551** 1-12 (0,1-12) F,W,S
Supervised Teaching Practicum with Exceptional Children: PR: Bachelor's degree, approved program, and C.I. Supervised observation and teaching under the direction of a properly certified exceptional child teacher.
- EDPL 558** 4 (3,1) F,W,S
Supervision of Professional Laboratory Experiences: PR: C.I. Study of the undergraduate professional laboratory experiences program with emphasis on the role and responsibilities of the Teacher Education Associate or Supervising Teacher.
- EDPL 650** 2-12 (0,2-12)
Internship: PR: Approval of Professional Laboratory Chairman. Internship in an appropriate educational setting under the direction of a qualified supervisor.
- EDPL 651** 4 (4,0)
Research Utilizing Problem Solving: PR: Rank III Certificate or C.I. The identification and diagnosis of classroom and/or school building problems. Action plans are formulated to resolve these problems and to evaluate action taken.

SECONDARY EDUCATION — DEVELOPMENTAL

- EDSE 303** 3 (3,0) F,W,S
School Programs: PR: EDTA 206 and EDTA 307. A study of the public school curriculum, kindergarten through grade twelve.

EDSE 305 **3 (3,0)**

Secondary School Curriculum: PR: EDTA 206 and EDTA 307. Study of total school patterns with emphasis on new trends, including subject areas, administration, supervision, school services and school related activities.

EDSE 310 **4 (3,2)**

Speech Instructional Analysis: PR: EDTA 206 and EDTA 307. Study of instructional programs in speech; objectives, materials, techniques, organization for instruction, evaluation procedures, current research.

EDSE 320 **3 (3,1)**

Foreign Language as Human Behavior: PR or CR: ENG 371 or C.I. Nature of language, objectives of foreign language learning and introduction to teaching basic skills. One hour laboratory required each week.

EDSE 321 **4 (3,2)**

Foreign Language Instructional Analysis: PR: EDTA 206 and EDTA 307. Study of course objectives for the high school curriculum and survey of methods and materials having special application for teaching foreign language.

EDSE 330 **4 (3,2)**

Business Instructional Analysis I: PR: EDTA 206 and EDTA 307. Techniques, materials, and instructional media; psychological principles, evaluation, and current trends in typewriting instruction.

EDSE 340 **4 (3,2)**

English Instructional Analysis: PR: EDTA 206 and EDTA 307. Study of course objectives for the high school curriculum and survey of methods and materials which have special application for teaching English.

EDSE 350 **4 (3,2)**

Mathematics Instructional Analysis: PR: EDTA 206 and EDTA 307. Study of course objectives for the high school curriculum and survey of methods and materials which have special application for teaching mathematics.

EDSE 360 **4 (3,2)**

Science Instructional Analysis: PR: EDTA 206 and EDTA 307. Study of course objectives for the high school curriculum and survey of methods and materials which have special application for teaching science.

EDSE 370 **4 (3,2)**

Social Science Instructional Analysis: PR: EDTA 206 and EDTA 307. Study of instructional programs in Social Sciences; objectives; materials; techniques; organization of instruction; evaluation procedures; current research.

EDSE 380 **4 (3,2)**

Physical Education Instructional Analysis: PR: EDTA 206 and EDTA 307. Study of course objectives for the high school curriculum and survey of methods and materials having special application for teaching physical education.

EDSE 404 **3 (3,0) F,W,S**

Instructional Techniques: PR: EDPL 330, CR: EDPL 408 and EDPL 430. Procedures, applications and evaluation of technical skills a teacher may employ in the classroom.

EDSE 421 **3 (3,1)**

Oral Teaching of Foreign Languages: PR: EDPL 330 or C.I. Audio-lingually-based demonstration class. Practice in linguistic methods. One hour laboratory required each week.

- EDSE 431** 3 (3,0)
Business Instructional Analysis II: PR: EDTA 206 and EDTA 307. Techniques, materials, and instructional media; psychological principles, evaluation and current trends in shorthand and related instruction.
- EDSE 432** 3 (3,0)
Business Instructional Analysis III: PR: EDTA 206 and EDTA 307. Techniques, materials, and instructional media; psychological principles, evaluation, and current trends in accounting and basic business instruction.
- EDSE 440** 3 (3,0)
Teaching Language and Composition: PR: EDTA 206 and EDTA 307. Techniques and methods in teaching of dialects, semantics, the various grammars. A survey of composition and rhetorical methods of selected authors.
- EDSE 441** 3 (3,0)
Literature for Adolescents: PR: Senior standing or C.I. Selecting and evaluating books for adolescents with emphasis on the uses of literature in the development of young people.
- EDSE 442** 3 (3,0) F,W,S,Su
Teaching Reading in the Content Areas: PR: Senior standing or C.I. Study of techniques and materials to develop reading comprehension, vocabulary, rate and study skills of secondary students in content areas; diagnosis; evaluation.
- EDSE 453** 3 (3,0)
Mathematics Laboratory Methods: PR: EDTA 206 and EDTA 307. Mathematics topics with special applications in classroom laboratory situations.
- EDSE 461** 3 (1,4)
Biology Laboratory Teaching: PR: Senior standing. Participation in introductory level biology laboratory. Includes laboratory set-ups, laboratory staff meetings and a weekly seminar.
- EDSE 462** 2 (1,3)
Chemistry Laboratory Teaching: PR: Senior standing. Participation in introductory level chemistry laboratory. Includes laboratory set-ups, laboratory staff meetings and a weekly seminar.
- EDSE 463** 2 (1,3)
Chemistry Laboratory Teaching: PR: EDSE 462. Continuation of EDSE 462.
- EDSE 464** 2 (1,3)
Physics Laboratory Teaching: PR: Senior standing. Participation in introductory level physics laboratory. Includes laboratory set-ups, laboratory staff meetings and a weekly seminar.
- EDSE 465** 2 (1,3)
Physics Laboratory Teaching: PR: EDSE 464. Continuation of EDSE 464.
- EDSE 471** 3 (3,0)
Trends in Secondary School Social Science: PR: Senior standing. Identification, development and evaluation of major social science concepts as they relate to contemporary school programs.
- EDSE 501** 4 (4,0)
Nature and Theory of the Middle School Curriculum: PR: Rank III Certificate or C.I. Philosophical constructs, characteristics of transescent youths, and organizational patterns in Middle School operation.

- EDES 502** 4 (4,0)
Middle School in Action: PR: Rank III Certificate or C.I. Supervised experiences designed to assist the development of individual competencies necessary for the Middle School educator.
- EDES 504** 4 (4,0)
Secondary School Curriculum Improvement: PR: Rank III Certificate or C.I. Secondary School self-studies for curriculum projects, accreditation reports, or staff development.
- EDES 521** 3 (3,0)
Media and Research in Foreign Language Teaching: PR: Rank III Certificate or C.I. Rationale and use of technological aids in foreign language teaching, classroom research and evaluation.
- EDES 541** 4 (4,0)
Media and Methods in English Education: PR: Rank III Certificate or C.I. Practicum in the use of various media in the English classroom with emphasis on student film making and production of media.
- EDES 550** 3 (3,0)
Intermediate School Mathematics: PR: Rank III Certificate or C.I. Diagnosis and remediation of learning difficulties in mathematics and selected individualized learning activity packages on mathematics topics for middle and junior high school mathematics teachers.
- EDES 553** 3 (3,0)
Laboratory Programs in Mathematics: PR: Rank III Certificate or C.I. Design, organization and development of special materials and projects for mathematics independent study.
- EDES 560** 3 (3,0)
Intermediate School Programs: PR: Rank III Certificate or C.I. Basic concepts, philosophies, and formats of experimental middle and junior high school science programs.
- EDES 561** 3 (3,0)
Inquiry in the Sciences: PR: Rank III Certificate or C.I. The techniques in teaching science by inquiry in the secondary school with the opportunity to participate in and develop inquiry lessons.
- EDES 562** 3 (3,0)
High School Biology Concepts: PR: Rank III Certificate or C.I. Major concepts in BSCS biology and other modern biology programs.
- EDES 570** 3 (3,0)
Intermediate School Social Science: PR: Rank III Certificate or C.I. Identification, development and evaluation of major social science concepts, new materials and teaching strategies related to Middle and Junior High School programs.
- EDES 571** 3 (3,0)
Inquiry in the Social Studies: PR: Rank III Certificate or C.I. An in-depth development of the role of inquiry in the new social studies with opportunity both to participate in and to develop inquiry episodes.
- EDES 601** 3 (3,0)
Nature and Theory of Curriculum: PR: Rank III Certificate or C.I. Philosophical and psychological basis for American education and the implications for curricular decision-making.
- EDES 602** 3 (3,0)
Patterns of Curriculum and Instruction: PR: Rank III Certificate or C.I. An analysis of exemplary secondary school programs and instructional procedures.

- EDSE 604** **3 (3,0)**
Seminar in Secondary School Instruction: PR: Rank III Certificate or C.I. Systematic and objective analysis of instruction, human relations; approaches to improving instructions and teaching strategies.
- EDSE 611** **5 (5,0)**
Curriculum in the Secondary School: PR: Rank III Certificate or C.I. Analysis of the forces which shape and contribute to the vertical and horizontal curriculum designs of secondary schools.
- EDSE 621** **3 (3,0)**
Trends in School Foreign Language Programs: PR: Rank III Certificate or C.I. Development, articulation and innovations in foreign language curriculums.
- EDSE 622** **3 (3,0)**
Linguistic Analysis in Teaching Foreign Languages: PR: Rank III Certificate or C.I. Linguistic aspects of foreign language learning. Applied linguistics and psycholinguistics in language teaching.
- EDSE 641** **3 (3,0)**
English Programs in the Secondary School: PR: Rank III Certificate or C.I. Concepts, problems, and advanced topics in such programs as Project English and other secondary school English projects.
- EDSE 642** **3 (3,0)**
Reading Guidance for Adolescents: PR: Rank III Certificate or C.I. Review of literary works appropriate for young people to provide insight into psychological problems common to teenagers.
- EDSE 643** **3 (3,0) F,W,S,Su**
Reading in the Content Areas: PR: Rank III Certificate or C.I. Identification and evaluation of reading skills, diagnosis of reading problems, and development of methods and materials to increase student reading performance.
- EDSE 651** **3 (3,0)**
Topics in Secondary School Mathematics: PR: Rank III Certificate or C.I. Major concepts in modern secondary school programs and selected individualized learning activity packages on mathematics topics for secondary school mathematics teachers.
- EDSE 652** **3 (3,0)**
Seminar in Mathematics Teaching: PR: Rank III Certificate or C.I. A review of prominent research and the writings of selected authors in mathematics education.
- EDSE 662** **3 (3,0)**
Laboratory Programs in Science Education: PR: Rank III Certificate or C.I. Design, organization and development of special materials and projects for science independent study centers.
- EDSE 671** **3 (3,0)**
Laboratory Programs in the Social Sciences: PR: EDSE 571 or C.I. Design, organization and development of special materials related to selected conceptual specializations.
- EDSE 672** **3 (3,0)**
Contemporary Social Science Education: PR: Rank III Certificate or C.I. A survey of recent developments and contemporary programs in all areas of the social sciences.

TEACHING ANALYSIS

EDTA 206

3 (3,0) F,W,S,Su

Human Development: Analysis of basic principles and applications in growth and learning from conception through adolescence. EDTA 307 recommended concurrently.

EDTA 305

3 (3,0) F,W,S

Principles of Evaluation: PR: Successful completion of Teaching Analysis (EDTA 307), and Human Development (EDTA 206). Principles of evaluation applied to advising pupils, diagnosing learning deficiencies, determining effectiveness of instruction and judging pupil progress.

EDTA 306

3 (3,0) F,W,S

Variables Affecting School Learning: PR: Successful completion of Phase I. Study of learning principles affecting classroom teaching/learning with particular attention to those most relevant to teacher/student interaction.

EDTA 307

5 (3,2) F,W,S,Su

Teaching Analysis: Initial requirement; an opportunity to examine and participate in general and specific dimensions of teaching with socio-economics factors emphasized. EDTA 206 recommended concurrently.

EDTA 480

3 (3,0) F,W,S,Su

Overview of Education: Study of public education in the United States focusing on the development of structure and process in the educational enterprise.

EDTA 481

3 (3,0) F,W,S,Su

Trends and the Future of Education: Identification of trends and postulations concerning the future of education and formulation of criteria for appraisal of innovations in education.

EDTA 490

2 (2,0) F,W,S,Su

Senior Seminar: Education in Human Affairs: Provides an overview of basic objectives, strategies, and techniques in education. This course, primarily intended for the senior student, is offered as one of the advanced Environmental Studies Seminars. Not open to the student enrolled in the College of Education.

EDTA 601

3 (3,0) F,W,S,Su

Fundamental Research Procedures in Education: PR: Rank III Certificate or C.I. Design rationale and construction, sampling methods, control and limits.

EDTA 611

3 (3,0) W,Su

Social Factors in American Education: PR: Rank III Certificate or C.I. Analysis of general and specific aspects of American education as they relate to Social and Behavioral Sciences.

EDTA 612

3 (3,0) F,S,Su.

Measurement and Evaluation in Education: PR: Rank III Certificate or C.I. Rationale and construction of evaluative instruments, parametric and non-parametric statistics, interpretation of data.

EDTA 613

3 (3,0) F,W,S,Su

Behavior Problems in the Public School: PR: Rank III Certificate or C.I. Role of the teacher in identification, strategies for remediation and referral procedures for working with behavioral problem children. Mental hygiene principles stressed.

EDTA 614

3 (3,0) F,S,Su

Studies in Human Development and Childhood: PR: Rank III Certificate or C.I. Recent research in Human Development and childhood relevant to contemporary American education. Emphasis prenatal through age 11.

- EDTA 615** **3 (3,0) W**
Studies in Teaching Analysis: PR: Rank III Certificate or C.I. Usage and analysis of micro-teaching, verbal and non-verbal approaches, social and behavioral variables influencing classroom learning.
- EDTA 616** **3 (3,0) F,S,Su**
Techniques of Game Use in Education: PR: Rank III Certificate or C.I. Analysis, development, and use of educational games as an approach to classroom teaching.
- EDTA 617** **3 (3,0) F,S,Su**
Adolescent Development and the Schools: PR: Rank III Certificate or C.I. Recent research in human development in adolescence with special emphasis upon research of interest to secondary school teachers.
- EDTA 618** **3 (3,0) W,Su**
Instructional Models and Learning Theories in Education: PR: Rank III Certificate or C.I. Recent research and theoretical analysis of instruction-learning interfaces as they relate to learning in the schools.

EDUCATION — VISUAL ARTS

- EDVA 401** **3 (3,0)**
Elementary School Art Instructional Analysis: PR: EDTA 206 and EDTA 307 or C.I. Methods and curriculum materials appropriate for teaching Visual Arts in the elementary schools.
- EDVA 402** **3 (3,0)**
Secondary School Art Instructional Analysis: PR: EDTA 206 and EDTA 307 or C.I. Methods and curriculum materials for teaching Visual Arts in the secondary schools.
- EDVA 404** **3 (3,0)**
Continuing Art Progress in Schools: PR: EDVA 401 and EDVA 402 or C.I. Programs and innovations for visual arts in the schools.
- EDVA 405** **3 (3,0)**
Schools Found Arts: PR: EDVA 431 and EDVA 432 or C.I. Appropriate materials for instruction in public schools will be examined and utilized.
- EDVA 431** **5 (5,0)**
Two-Dimensional Instructional Materials: PR: EDVA 401 or EDVA 402 or C.I. Application of two-dimensional materials to appropriate levels of instruction: chalk, ink, water color, crayon, tempera, acrylics, paper, fiber, and oils.
- EDVA 432** **5 (5,0)**
Three-Dimensional Instructional Materials: PR: EDVA 401 or EDVA 402 or C.I. Application of three-dimensional materials to appropriate levels of instruction: wood, paper, plaster, stone, clay, wax, fiber, metal, and synthetics.
- EDVA 433** **5 (5,0)**
Graphic Instructional Materials: PR: EDVA 401 or EDVA 402 or C.I. Application of graphic materials to appropriate level of instruction: direct and indirect basic processes of reproduction of mono and multi-printing.
- EDVA 503** **3 (3,0)**
Jewelry Making in Schools: PR: C.I. Jewelry making appropriate for school age children using standard public school equipment.

EDVA 504 3 (3,0)

Contemporary Visual Arts Education: PR: EDVA 401 and EDVA 402 or C.I. A study of current programs and innovations in public school Visual Arts Programs.

EDVA 505 3 (3,0)

Found Arts: PR: EDVA 431 and EDVA 432 or C.I. Materials available for instruction in the public schools will be explored in depth in relation to their appropriateness and productive qualities.

EDVA 601 3 (3,0)

Two-Dimensional Instructional Materials: PR: EDVA 401, EDVA 402, and EDVA 431, or C.I. Application of two-dimensional materials to appropriate levels of instruction: chalk, ink, water color, crayon, tempera, acrylics, paper, fiber, and oils.

EDVA 602 3 (3,0)

Three-Dimensional Instructional Materials: PR: EDVA 401, EDVA 402, and EDVA 432, or C.I. Application of three-dimensional materials to appropriate levels of instruction: wood, paper, plaster, stone, clay, wax, fiber, metal, and synthetics.

EDVA 603 3 (3,0)

Graphic Instructional Materials: PR: EDVA 401, EDVA 402, and EDVA 433, or C.I. Application of graphic materials to appropriate level of instruction: direct and indirect basic processes of reproduction of mono and multi-printing.

VOCATIONAL / TECHNICAL EDUCATION

EDVE 381 3 (3,0)

Career Development Analysis: Analysis of job core areas. Community, state and federal informational services, educational requirements and employment prospects in selected areas. Application and job interview techniques.

EDVE 401 4 (4,0)

Philosophy and Principles of Technical Education: PR: Rank III Certificate or C.I. Overview of technical/vocational education; study of purposes, organization curriculum, financial supports, trends and history of technical/vocational education.

EDVE 402 5 (5,0)

Methods of Teaching Technical/Vocational Subjects: PR: Rank III Certificate or C.I. A study of the techniques, skills and procedures used in teaching technical/vocational education subjects.

EDVE 411 4 (4,0)

Analysis of Vocational Occupations: PR: Rank III Certificate or C.I. Techniques of analyzing components of an occupation to obtain content for instruction.

EDVE 421 4 (4,0)

Curriculum Planning for Vocational Education: PR: Rank III Certificate or C.I. Systematic development of a course of study for use in teaching a subject in an occupational area.

EDVE 422 4 (4,0)

Evaluation of Occupational Instruction: PR: Rank III Certificate or C.I. This course is concerned with the total evaluation process as it relates specifically to vocational instruction.

EDVE 423 4 (4,0)

Analysis of Learning as Applied to Vocational Education: PR: Rank III Certificate or C.I. Course is designed to familiarize the vocational application to the Vocational classroom.

- EDVE 451** 4 (4,0)
Occupational Education Facilities: PR: Rank III Certificate or C.I. Procedures and techniques in planning occupational educational facilities.
- EDVE 461** 4 (4,0)
Instructional Analysis in Industrial/Technical Education: PR: Rank III Certificate or C.I. Course objectives, techniques, materials, evaluation, and instructional media having special application for teaching occupational and technical subjects.
- EDVE 462** 4 (4,0)
Classroom Management in Occupational Education: PR: Rank III Certificate or C.I. Fundamentals of managing an occupational classroom or laboratory involving the concepts used in industrial plant management.
- EDVE 463** 4 (4,0)
Development of Occupational Education Programs: PR: Rank III Certificate or C.I. Occupational task analysis techniques and its application in formulating a basic instructional plan.
- EDVE 481** 4 (4,0)
Principles of Occupational Education: PR: Rank III Certificate or C.I. Recent developments, contemporary programs, and structure of vocational, technical, and adult education.
- EDVE 482** 4 (4,0)
School/Community Development for Vocational Education: PR: Rank III Certificate or C.I. Identification, analysis, and maintenance of working relationships between school and community institutions.
- EDVE 571** (4-8)
Occupational Work Experience: PR: Rank III Certificate and C.I. Directed occupational work experiences and seminar in selected offices, businesses or industries, Designed to fulfill one year's occupational experience in business and vocational education.

ELECTRICAL ENGINEERING AND COMMUNICATIONS SCIENCES

- EECS 311** 4 (3,3) F,S
Introduction to Digital Circuits: PR: COMP 205. Electrical components used in digital switching circuits; properties of magnetic materials; construction of basic logic gates and flip-flops. Intended primarily for computer science majors.
- EECS 321** 4 (3,3) F,W
Electrical Networks: PR: ENGR 321. Analysis of linear circuits. Laplace and Fourier transform techniques. State variable representation. Computer aided analysis techniques.
- EECS 322** 4 (3,3) W,S
Electronic Engineering: PR: ENGR 322. Electronic devices and circuits including small signal amplifiers, power amplifiers, and switching circuits.
- EECS 341** 4 (4,0) F,W
Electromagnetic Fields: PR: ENGR 322 and MATH 331. Introduction to electrical fields and waves.
- EECS 411** 4 (3,3) F,S
Logical Component Design: PR: ENGR 322. Switching theory. Design and application of serial and parallel logical components including counters, registers, adders. Principles of stored program computers.

- EECS 412** 4 (3,3) W
Logical Systems Design: PR: EECS 411. Systems investigation, design, and operation of digital computers; study of a basic hardware set and a basic software set.
- EECS 413** 4 (3,3) W
Digital Systems and Circuits: PR: EECS 411. Investigation of integrated circuit digital sub-systems and their incorporation into circuits for digital applications.
- EECS 414** 3 (2,2) S
Analog Computers: PR: ENGR 321 and ENGR 342. Theory and operation of modern analog computer. Analysis and synthesis of continuous and discrete systems by simulation.
- EECS 431** 3 (2,3)
Electrical Machinery: PR: ENGR 323. Methods and techniques of systems analysis applied to the dynamics of electrical machinery.
- EECS 442** 4 (3,3) W
Microwaves: PR: EECS 341. Microwave devices and systems and measurement techniques.
- EECS 451** 4 (3,3) S
Communication Systems: PR: EECS 321 and EECS 322. Information transmission, modulation, and noise.
- EECS 461** 3 (2,3) F
Semiconductor Devices: PR: EECS 322 and ENGR 352. Semiconductors with non-uniform impurity distribution; impurity diffusion, analysis of drift transistor with constant built-in field. Junction and metal-oxide field-effect transistors.
- EECS 464** 3 (2,3) S
Active Circuits: PR: EECS 322. CR: ENGR 421. Integrated circuit fabrication and characteristics. Feedback amplifier types, performance and stability. Introduction to operational amplifier design and application.
- EECS 513** 3 (3,0) F
Pulse Circuits: PR: Basic electronics course. Wave generating, shaping, and logic circuits.
- EECS 514** 1 (0,3) F
Pulse Circuits Laboratory: Laboratory for EECS 513.
- EECS 531** 3 (3,0)
Environmental Control Systems: PR: ENGR 421 or equivalent. Modeling, control methods, stability, and optimization applied to environmental systems.
- EECS 535** 3 (3,0) W
Electric Power Generation and Distribution: PR: ENGR 323 or equivalent. Introduction to electric energy sources. Concept of complex power in single and three phase systems. Synchronous machines, power transformer, and transmission lines.
- EECS 543** 3 (3,0) F
Coherent Optics Applications: PR: PHYS 354. Theory and design of coherent optical systems lasers, information, processing, communication, holography.
- EECS 551** 3 (3,0) F
Signal and System Analysis: Representation of signals and linear systems in the frequency and time domains, transforms, sampling, random signals.
- EECS 553** 3 (3,0) F
Random Processes: PR: EECS 321 and ENGR 371. Random variables, averaging, sampling, elements of probability theory.

- EECS 611** 3 (3,0)
Modern Circuit Design: Application of computer aided methods for the analysis and synthesis of passive and active networks.
- EECS 612** 3 (3,0) Su
Synthesis of Electric Filters: Analysis and synthesis of electric filters.
- EECS 613** 3 (3,0) W
Digital Circuits: Analysis of logic circuits, design of digital systems using contemporary integrated circuits, laboratory project.
- EECS 621** 3 (3,0) S
Digital Computer Systems: PR: EECS 613. Investigation of general purpose computer systems and their components.
- EECS 623** 3 (3,0) F
Modern Analog Computers: Analog programming fundamentals and techniques emphasizing integral use of logic and analog elements as applied to parameter optimization, boundary value problems, and partial differential equations.
- EECS 624** 1 (0,3) F
Modern Analog Computer Laboratory: CR: EECS 623. Laboratory for EECS 623 consisting of simulation using a modern analog computer.
- EECS 631** 3 (3,0) W
Modern Control Theory: State space method of analysis for discrete and continuous control, phase plane, Lyapunov stability.
- EECS 632** 3 (3,0) S
Optimal Control Systems: PR: EECS 631. Cost Function, control restraints, initial and target states. Pontryagin's theorem, time, fuel, and energy optimization.
- EECS 633** 3 (3,0) Su
Nonlinear Control Systems: PR: EECS 631. Analysis and synthesis techniques for nonlinear systems, stability classifications, limit cycles, Popov's theorem. State variable description.
- EECS 641** 3 (3,0) Su
Electromagnetic Fields: Maxwell's equations. Boundary conditions. Propagation, reflection, and refraction of waves. Guided waves. Radiation.
- EECS 643** 3 (3,0) W
Optical Electronic Communication Systems: PR: EECS 543 or C.I. Introduction to optical electronic systems, such as both gas and solid state laser systems, optical detectors, modulators, and frequency convertors. Optical communication systems.
- EECS 644** 3 (3,0) S
Optical Communication Theory: Application of information theory to optical communication systems. Development of optical correlation techniques. Holographic techniques and applications.
- EECS 645** 3 (3,0)
Remote Sensing Optical Systems: PR: EECS 341 or equivalent. Study of electromagnetic phenomena and systems at optical and near optical wavelengths and the use of such systems in environmental monitoring.
- EECS 652** 3 (3,0) W
Digital Processing of Signals: Linear discrete system theory, z-transform theory, discrete spectrum analysis, and digital filtering.

EECS 653 3 (3,0) W
Communication Theory: Theory of communicating in the presence of noise, modulation, optimum filtering, phase-lock loop.

EECS 662 3 (3,0) F
Amplifier Design: Small-signal device models; analysis and synthesis of electronic amplifier circuits in frequency and time domains.

EECS 664 3 (3,0) W
Operational Amplifiers: The differential amplifier stage, multi-staging, linear circuit applications, uses in non-linear circuits, active filters.

ENGINEERING CORE

ENGR 100 4 (4,0) F,W,S,Su
Oceanography and Space: Fundamentals of oceanography and space with emphasis on the engineering aspects and uses. May be used to satisfy Scientific Environment requirement of Environmental Studies Program.

ENGR 101 3 (2,2) F,W
Engineering Graphics: Spatial visualization, sketching, and graphical presentation as a form of engineering communication. Engineering drawing, descriptive geometry, manipulation of vectors and graphical solution techniques.

ENGR 103 4 (3,2) F,W
Creative Design: PR: C.I. Role of the engineer as a creative design professional. Emphasis on understanding the creative process and the factors that influence it. Case studies.

ENGR 104 3 (3,0)
Man Made World: Introduction to engineering and its role in the understanding of the man made world.

ENGR 151 3 (2,2) F,W
Chemical Foundations of Engineering: PR: Satisfactory performance in one year of high school chemistry or physics; CR: MATH 211. Engineering applications of basic chemical concepts. Atomic and molecular structure, states of matter and their energies, chemical equilibria and reaction rates, organic compounds, and industrial processes.

ENGR 152 3 (2,2) W
Chemical Foundations of Engineering: PR: ENGR 151. Continuation of ENGR 151.

ENGR 211 4 (4,0) F,W,S,Su
Engineering Concepts: CR: MATH 321. Introduction to the basic physical phenomena essential to understanding of engineering structures, machines processes, and systems. Primary emphasis on mechanics, materials behavior, and thermofluid mechanics phenomena.

ENGR 310 4 (4,0) F,W,S,Su
Engineering Analysis — Statics: PR: ENGR 211 and MATH 322. Fundamental concepts of mechanics including resultants of force systems, free-body diagrams, equilibrium of rigid bodies, and analyses of structures.

ENGR 311 4 (4,0) F,W,S,Su
Engineering Analysis — Dynamics: PR: ENGR 310, and MATH 323. Kinematics and kinetics of particles and rigid bodies; mass and acceleration, work and energy, and impulse and momentum.

ENGR 312 5 (4,2) F,W,S,Su
Mechanics of Materials: PR: ENGR 211; CR: MATH 331. Concepts of stress and strain, Hooke's Law; strength and deflection of axial force members, shafts in torsion and beams in flexure; combined stress; stability of columns.

- ENGR 320** 4 (4,0) F,W,S,Su
Electrical Science: PR: MATH 323 and ENGR 211. General concepts of electricity and magnetism; the development of fundamental laws of electrical engineering; the introduction of the basic circuit elements.
- ENGR 321** 4 (3,2) F,W,S,Su
Principles of Electrical Engineering: PR: ENGR 320; CR: MATH 331 and COMP 102. Introduction to fundamental laws of electrical circuits, including transient, steady-state AC, and general network analysis.
- ENGR 322** 4 (3,2) F,W,S,Su
Electronic Engineering: PR: ENGR 321. Electronic circuits.
- ENGR 323** 4 (3,2) F,W,S,Su
Electrical Devices and Systems: PR: ENGR 322. Electromagnetic energy conversion devices, feedback amplifiers, and instrumentation.
- ENGR 331** 3 (3,0) F,W,S,Su
Thermodynamics: PR: ENGR 311; CR: MATH 324. Work, heat and energy transformations. Relation of properties. Laws, concepts and modes of analysis common to all applications of thermodynamics in engineering.
- ENGR 332** 4 (3,2) F,W,S,Su
Fluid Mechanics: PR: ENGR 331. Basic principles of continuum fluid mechanics and transport concepts.
- ENGR 341** 3 (3,0) F,W,S,Su
Engineering Economic Analysis: PR: ECON 201 or C.I. Economic evaluation of engineering alternatives. Time value of money and economic impact of taxes, risk, depreciation.
- ENGR 342** 3 (3,0) F,W,S,Su
Systems Analysis: PR: MATH 324; CR: MATH 331. Introduction to mathematical analysis of linear systems. Behavior of linear systems as manifested by characteristics functions. Introduction to Laplace transforms, matrices, and state variable techniques.
- ENGR 351** 3 (3,0) F,W,S,Su
Structure and Properties of Materials I: PR: ENGR 152 and MATH 322. Electrons and bonding, crystals, noncrystalline solids, equilibrium diagrams, nonequilibrium phase transformations, and diffusion in solids.
- ENGR 352** 3 (2,2) F,W,S,Su
Structure and Properties of Materials II: PR: ENGR 351. Chemical, mechanical and electrical properties of materials; structure and properties of engineering alloys.
- ENGR 361** 3 (3,0) F,W,S,Su
Man and His Environment: PR: ENGR 152 or equivalent. Man's interaction with the air, water and land environment in which he lives. The role of engineering in control of the physical environment for the benefit of mankind.
- ENGR 371** 3 (3,0) F,W,S,Su
Probability and Statistics for Engineers: PR: MATH 323. Axioms of probability; combinatorial and geometrical probability; probability distributions; measures of location and dispersion; sampling and sampling distributions; estimation and tests of hypotheses; engineering applications. (Same as STAT 335.)
- ENGR 401** 2 (2,0) F,S
Professionalism, Practice and Ethics: PR: Junior or Senior Standing. Study of the professional-engineer's role, practice and responsibility to act in the interests of public health,

safety and welfare.

ENGR 403 **3 (2,2) S**

Senior Creative Design: PR: Senior standing. Application of the fundamental engineering design algorithm to design synthesis and inventiveness methods culminating in an individual or group engineering design project.

ENGR 421 **4 (4,0) F,S**

Linear Control Systems: PR: MATH 331 and ENGR 342. Theoretical and experimental study of the dynamics of linear, lumped parameter models of mechanical, electrical, fluid, thermal and mixed systems as applied to control systems.

ENGR 431 **3 (3,0) F,W,S,Su**

Thermodynamics and Transport Processes: PR: ENGR 331; CR: ENGR 332. Consequences of the second law and combined first and second law analysis of thermodynamics systems. Introduction to heat transfer including conduction, convection, and radiation.

ENGR 442 **3 (3,0) F,W,S,Su**

Operations Research: PR: ENGR 371. Mathematical methods of operations research; linear programming, techniques of optimizations.

ENGR 443 **3 (3,0) F,W,S,Su**

Engineering Administration: PR: ENGR 341 and senior standing. Engineering organization and administration; delegation of authority and responsibility; effective utilization of resources; compensation structure, labor-management relations; selected case studies.

ENGINEERING — INTERDISCIPLINARY COURSES

ENGR 380 **3 (3,0) F,W,S**

Production Management Concepts: The evolution of concepts, processes and institutions in the management of the production function. Productivity trends and measures of performance in contemporary industrial production.

ENGR 480 **3 (3,0)**

Systems Modeling: PR: COMP 101 or equivalent. Representation of man/machine systems through analytic and computer-based models. Case studies in the analysis and improvement of systems in industry, education, and government.

ENGR 481 **3 (3,0)**

Man and Machine: The influence and interrelationship of invention and technical progress on the evolution of social forms and institutions.

ENGR 482 **3 (3,0)**

Engineering & Technology in History: Important developments in engineering and technology and their effect on society and our socio-economic processes and institutions.

ENGR 483 **3 (3,0)**

Technology and Social Change: Review of existing theories of social change, analysis of the role of technology as related to social change, and study of contemporary events in technology and their possible impact on society.

ENGR 484 **3 (3,0)**

Science in History: Examination of the reciprocal relations of science and society from ancient to recent times.

ENGR 485 **3 (3,0)**

Topics in Urban Development: Production, distribution, and consumption of various com-

modities. Engineering relationships to distribution, internal structure, function of urban developments. Interrelationship of engineering, social, economic, and cultural phenomena.

ENGR 486**3 (3,0)**

Energy and Man: Investigation of the forms of energy available, energy resources versus requirements in a technological society of increasing population problems, solutions and future predictions.

ENGR 487**3 (3,0)**

Historical Architecture: Architecture as the realization of changing aesthetic and cultural ideals and the expression of changing forms of society. Development of understanding of our physical environment through a study of the forms, functions and determinants of architecture.

ENGR 488**3 (3,0)**

Man and Environment: PR: C.I. A discussion of environmental factors of importance to man, man's interaction with the environment, engineering and non-engineering measures to insure improvement and maintenance of environmental quality. Not intended for engineering students.

ENGR 489**3 (3,0)**

Computers, Cybernetics and Society: The effects of computers and the cybernetic revolution on the individual and society. Effects of positive and negative feedback on biological, technological and social systems. Computers and their interactions with human system.

ENGR 490**2 (2,0)**

Engineering in Human Affairs: The impact of engineering on modern society. This course, primarily intended for the senior student, is offered as one of the Advanced Environmental Studies Seminars. Not open to students majoring in the College of Engineering.

ENGINEERING MATHEMATICS AND COMPUTER SYSTEMS

EMCS 423**3 (3,0)**

Mathematics Review for Engineers: Comprehensive review of college algebra, trigonometry, analytical geometry, vector calculus, and an introduction to differential equations for non-current engineering students wishing to pursue advanced work.

EMCS 430**3 (3,0) F**

Engineering Software Design: PR: COMP 102 or equivalent; CR: MATH 331. Design theory and construction of special purpose engineering software. Survey of problem oriented programming languages.

EMCS 431**3 (3,0) F**

Mini-Computers in Engineering: PR: COMP 102. Orientation in the NOVA mini-computer. Organization of the computer, memory and processor, basic programming, input-output equipment and instruction, and computer interfacing.

EMCS 432**3 (3,0) W**

Principles of Computer Control: PR: ENGR 421 and EMCS 431 or C.I. Design, analysis, and implementation of computer based control systems, including analog, digital and on-line schemes for process identification and control.

EMCS 433**3 (3,0) S**

Computer Systems in Engineering: PR: EMCS 431 and EMCS 432. Techniques of direct digital optimizing and adaptive control applied to a fully instrumented laboratory scale physical process.

- EMCS 460** **3 (3,0) F**
Optimum Seeking Methods: PR: C.I. Methods of search for the optimum of incompletely specified functions. Single and multivariable search techniques, random search, Febonacci search, minimax concept, and gradient methods.
- EMCS 470** **3 (3,0) S**
Engineering Mathematical Systems: PR: MATH 331 and IEMS 447. The solution of differential equations generated from modeling real systems. Examples from economics, biology, engineering, et al.
- EMCS 471** **3 (3,0) W**
Engineering Mathematical Analysis: PR: MATH 324 and MATH 331. The application of mathematical methods to engineering problems including vector and tensor fields, state space techniques, orthogonal curvilinear coordinates and orthogonal functions.
- EMCS 530** **3 (3,0) W**
Engineering Data Reduction: PR: ENGR 371. Methods for processing and analysis of scientific test and process data, including computer filtering schemes and data compression and recovery techniques.
- EMCS 572** **3 (3,0) W**
Engineering Mathematical Analysis: EMCS 471 or C.I. The application of mathematical methods to engineering problems including linear analysis and transformations and matrix manipulation.
- EMCS 573** **3 (3,0) Su**
Analytical Methods in Engineering: PR: EMCS 471 or C.I. The kinematics and dynamics of ideal field theory. Complex potential and conformal mapping with application to problems in fluid flow, thermal, and electrical potential.
- EMCS 574** **3 (3,0) S**
Analytical Methods in Engineering: PR: EMCS 471 or C.I. Applications and solutions of partial differential equations. Concepts of mathematical modeling. Development of characteristic properties of equations and solution methods.
- EMCS 610** **4 (3,2) S**
Hybrid Computer Systems: PR: EMCS 471 or C.I. Analysis of Hybrid Systems and components. Applications of hybrid systems to problems in optimization theory, control, man-machine systems, and biological systems.
- EMCS 630** **3 (3,0) W**
Discrete System Simulation: PR: ENGR 371 or equivalent. Computer-based modeling and analysis of discrete-space, discrete-time engineering related systems. Use of FORTRAN IV and GPSS/360 for implementing such models. Laboratory assignments.
- EMCS 631** **3 (3,0) S**
Continuous System Simulation: PR: ENGR 342 or equivalent. Computer-based modeling and analysis of continuous systems. Use of state-space techniques and the CSMP/360 simulation language. Laboratory assignments.
- EMCS 632** **3 (3,0) F**
Atomata Theory: PR: EECS 411 or equivalent. Structural theory and performance characteristics of finite-state machines.
- EMCS 640** **4 (3,2) S**
Engineering Data Reduction: PR: EMCS 530. Digital analysis of multidimensional data. Applications of multidimensional orthogonal transforms.

ENGINEERING MECHANICS AND MATERIAL SCIENCES

- EMMS 411** **3 (3,0) F**
Semiconductor Materials and Devices: PR: ENGR 323 and ENGR 352. Electrical conduction in semiconductors; basic concepts of drift, diffusion, carrier generation and recombination. Physical theory and models for the junction diode and transistor.
- EMMS 412** **3 (3,0) W**
Electronic Properties of Materials: PR: ENGR 351 and PHYS 344. Electronic processes in solids. Electrical, magnetic and optical properties of solids. Electron energies in solids. Superconducting materials.
- EMMS 413** **3 (3,0) S**
Thermodynamic Properties of Materials: PR: EMMS 433. Fundamental concepts of thermodynamics and kinetics are applied to the study of solid state phase transformations, equilibrium in multicomponent systems and diffusion in solids.
- EMMS 414** **3 (3,0) Su**
Mechanical Properties of Materials: PR: ENGR 312 and ENGR 352. Fundamentals of mechanical behavior of engineering materials. Plastic deformation, creep, fatigue, relation of microstructure to macroscopic behavior.
- EMMS 421** **3 (3,0) W**
Theory of Crystalline Solids: PR: ENGR 352. Modern theory of crystalline materials. Topics treated include crystal structure, mechanical, thermal and transport properties.
- EMMS 430** **3 (3,0) S**
Structure and Properties of Alloys: PR: ENGR 352. Application of kinetic factors and phase equilibria to behavior of ferrous and non-ferrous alloys; relation to properties to structure, composition, and environmental factors.
- EMMS 433** **3 (3,0) Su**
Physical Metallurgy: PR: ENGR 331 and EMMS 421. Principles underlying the study of diffusion, recovery and recrystallization, and solidification processes in metal systems.
- EMMS 434** **3 (2,2) F**
Experimental Techniques for Materials: PR: ENGR 352. Theoretical and experimental study of the application of optical microscopy, X-ray diffraction and electron microscopy for materials analysis.
- EMMS 435** **3 (3,0) F**
Structure and Properties of Ceramics and Polymers: PR: ENGR 352 or C.I. Structure of vitreous and crystalline non-metals; mechanical, thermal, and electrical properties of organic polymers and composite materials.
- EMMS 501** **3 (2,2) F**
Electron Microscopy of Crystalline Materials: PR: EMMS 421 or C.I. Introduction to the optics of the electron microscope, electron and electron diffraction contrast mechanisms in foils; evaluation of methods of specimen preparation.
- EMMS 502** **3 (2,2) S**
X-Ray Diffraction: PR: EMMS 421 or C.I. Properties of X-rays. Atomic arrangements in crystals and determination by X-ray diffraction. The Laue, rotating crystal, and powder methods. Applications to materials problems.
- EMMS 508** **3 (3,0) W**
Electronic Properties: PR: EMMS 412. Selected advanced topics on various aspects of electronic materials.

- EMMS 511** 3 (3,0) W
Phase Transformation in Solids: PR: EMMS 413 and EMMS 430 or C.I. Principles of phase transformations, including precipitation, recrystallization, eutectoids, and martensite; emphasis on the understanding of the thermodynamic and kinetic processes underlying these phenomena.
- EMMS 521** 3 (3,0) S
Corrosion: PR: EMMS 352 or C.I. Mechanisms, characteristics, types of corrosion, Evaluating corrosion resistance. Metals, ceramics, and organic materials in corrosive environments. Oxidation and other high temperature gas-metal reactions.
- EMMS 541** 4 (4,0) W
Intermediate Mechanics of Materials: PR: ENGR 312 and MATH 331. Stress and strain at a point; failure theories; elements of plane elasticity; curved beams; bending and torsion of thin-walled structures; theory of thin plates.
- EMMS 600** 3 (3,0) F
Physical Metallurgy: PR: EMMS 433 or C.I. Thermodynamics and kinetics of nucleation and growth reactions in metallurgical processes with special emphasis on nucleation in solids. Diffusion theory. Point, line and surface defects.
- EMMS 601** 3 (3,0) W
Physical Metallurgy: PR: EMMS 600. Continuation of EMMS 600.
- EMMS 603** 3 (2,2) W
Electron Microscopy II: PR: EMMS 501. Kinematical and dynamical theory of contrast in thin crystalline films. Selected advanced topics in electron microscopy applied to materials.
- EMMS 610** 3 (3,0) W
Mechanical Metallurgy: PR: EMMS 414. Theoretical treatment of solid solution hardening, strain hardening, precipitation hardening. Microscopic treatment of theories of fatigue, fracture, creep. The role of dislocation interactions.
- EMMS 611** 3 (3,0) S
Mechanical Metallurgy: PR: EMMS 610. Continuation of EMMS 610.
- EMMS 620** 3 (3,0) S
Physical Ceramics: PR: EMMS 435 or C.I. Composition and structure of ceramics and glasses. Discussion of thermal conductivity; heat capacity, magnetic behavior and ferroelectric behavior with emphasis on real materials.
- EMMS 630** 3 (3,0) Su
Polymer Science: PR: EMMS 435 or C.I. Consideration of the structure and properties of polymers from the viewpoint of materials science. Specific attention to polymerization processes, crystal structure, and mechanical properties.
- EMMS 641** 4 (4,0) S
Theory of Elasticity: PR: EMMS 541 and EMCS 573. Tensor analysis. Stress and strain at a point. Linear elastic behavior in two and three dimensions. Energy methods. Various methods of solution for plane problems.
- EMMS 642** 4 (4,0) F
Continuum Mechanics: PR: EMMS 312 or C.I. Tensor analysis. Lagrangian and Eulerian descriptions of deformation. Constitutive equations. Behavior of elastic solids. Body moments and couple stresses.
- EMMS 643** 4 (4,0) W
Continuum Mechanics: PR: EMMS 642. Continuation of EMMS 642.

- EMMS 644** 3 (3,0) S
Micromechanics of Composite Materials: PR: EMMS 641 or C.I. Anisotropic elasticity. Elastic inclusions. Elastic behavior of piecewise homogeneous materials. Bounds on elastic constants. Laminated, anisotropic plates. Failure theories.
- EMMS 645** 3 (3,0) F
Theory of Plasticity: PR: EMMS 641 or C.I. The ideal rigid-plastic solid. Collapse. Upper and lower bound theorems. Linear structures. Yield criteria. Characteristics. Plates.
- EMMS 646** 3 (3,0) W
Elastic Stability: PR: EMMS 641 or C.I. Theoretical treatment of stability of structural elements. Columns. Frameworks. Thin-walled beams. Methods of Ritz, Galerkin, and Vianello-stodola.
- EMMS 652** 4 (4,0) S
Theory of Plates and Shells: PR: EMMS 541 or C.I. Theory of bending of thin plates. Variational principles. Non-linear theory of plates. Theory of thin shells with small deformations. Various approximate theories. Stability.
- EMMS 654** 3 (3,0) F
Dynamics of Structures: PR: EMMS 661 or C.I. Dynamic behavior of linear structures. Natural vibrations of structural systems. Damping in structures. Response to periodic and non-periodic excitations. Emphasis on matrix methods.
- EMMS 661** 3 (3,0) S
Advanced Dynamics: ENGR 311, EMCS 471 or C.I. Dynamics of particles, distributed mass systems, and rigid bodies from an advanced viewpoint. Virtual work principle, Lagrange's and Euler's equations of motion and Hamilton's principle.
- EMMS 662** 3 (3,0) F
Advanced Dynamics: PR: EMMS 661. Continuation of EMMS 661.

ENGINEERING TECHNOLOGY

- ENT 303** 4 (4,0) S
Problem Analysis: PR: MATH 311, MATH 312 or C.I. Applications of computational techniques to selected problems in the practice of engineering technology. Problems relating to specific option areas.
- ENT 304** 3 (3,0) F
Technical Economic Analysis: PR: Junior standing. Analysis of cost elements in technical projects. Basis for comparison of alternatives. Economic analysis of technical operations.
- ENT 305** 4 (4,0) W
Applied Mechanics: PR: MATH 110 and MATH 111 or equivalent. Static and dynamic effects of forces acting on rigid bodies. Friction, centers of gravity, moments of inertia, rotation, plane motion.
- ENT 306** 4 (4,0) S
Materials and Processes: PR: MATH 110 and MATH 111 or equivalent. Relation between structure and properties of metals, wood, ceramics and polymers. Testing and inspection, casting, forming and working of metals, heat treatment, and joining.
- ENT 321** 5 (4,3)
Electronic Circuits: PR: MATH 311 and basic electrical circuit theory. Introduction to graphical and analytical analysis of electronic circuits. Amplifiers, feedback networks and power supplies.

- ENT 322** 4 (3,3)
Digital Circuits: Operations and application of digital circuits. Laboratory.
- ENT 331** 3 (3,0)
Hydraulics and Hydrology: PR: Junior standing. Applied hydraulics and hydrology including topics in closed and open channel flow, rainfall, runoff, seepage, ground water, storage and impoundments, wells, etc.
- ENT 332** 3 (3,0)
Water Supply Systems: Fundamental techniques applicable to technical projects dealing with water resources, hydrology, water treatment, transmission and distribution.
- ENT 333** 3 (3,0)
Wastewater Systems: Fundamental techniques applicable to technical projects dealing with collection and transmission of wastewater, treatment of wastewater, handling and disposal of effluent and sludge.
- ENT 341** 3 (3,0)
Contracts and Specifications: Study of basic legal principles involved in contractual provisions and interrelationships with applicable specifications and the application of such principles.
- ENT 342** 4 (3,2)
Electro-Mechanical Design: PR: ENT 305, and ENT 401. Masses, motions, kinematics and dynamics of machinery.
- ENT 343** 4 (3,3)
Product Design: PR: ENT 342. Principles of layout and dimensioning for production. Consideration of design factors, standards, specifications and codes with emphasis on producibility.
- ENT 351** 3 (3,0)
Work Analysis: PR: Junior standing. Analysis of work elements in technical projects. Work simplification and methods improvements in technical operations.
- ENT 352** 3 (3,0)
Cost Estimation and Analysis: Determination and analysis of cost of manufacturing and construction operations including applicable indirect costs. Costs of all applicable work materials and services are included.
- ENT 353** 3 (3,0)
Computer Methods in Industry: PR: COMP 102. An overview of industrial EDP applications. Includes data processing concepts, functions of the computer, and applications in data processing, process and machine control.
- ENT 401** 5 (4,2) W
Electricity and Electronics: Electricity and magnetism, applications of the basic principles of electric circuits, electronic amplifiers.
- ENT 402** 4 (4,0) S
Strength of Materials: PR: ENT 305 or C.I. Relationship between external forces and action of members of a structure. Topics include stress and strain, torsion, beams, columns, stress concentrations and fatigue.
- ENT 403** 4 (4,0) F
Applied Thermodynamics: PR: ENT 305. Introduction to the concepts of energy, work, and heat; thermodynamic properties and processes; basic laws and formulae; cycle efficiency; flow through orifices and nozzles; empirical design formulae.

- ENT 421** **3 (3,0)**
Computer Systems: PR: COMP 102 and ENT 322. The hardware organization of process control and special purpose digital computers. Peripherals and programming techniques.
- ENT 422** **3 (3,0)**
Antennas and Propagation: Study of the basic theory and technology used in high frequency transmission lines and waveguides, propagation and radiation, antennas.
- ENT 423** **3 (3,0)**
Feedback Control: Feedback control system analysis and design techniques, control system components, and applications to practical control systems.
- ENT 424** **3 (3,0)**
Communications Systems: The principles of oscillators, noise, symmetrical circuits, modulation and demodulation, pulse and ramp circuits.
- ENT 431** **3 (3,0)**
Treatment Plant Analyses and Control: Basic techniques applicable to lab analyses, control measures, and overall operation of water and wastewater treatment plants.
- ENT 432** **3 (3,0)**
Environmental Sampling and Analyses: Fundamental techniques applicable to sampling and performing lab analyses of our physical environment, including air, water and land. Interrelation and analysis of results.
- ENT 433** **3 (3,0)**
Air Pollution Control: Fundamental techniques applicable to analyzing composition and sources of pollutants, measuring concentrations, and controlling emissions. Air pollution control programs, laws, rules, and regulations.
- ENT 434** **3 (3,0)**
Solid Waste Management: Fundamental techniques applicable to technical projects involving solid waste composition, collection and disposal. Solid wastes programs, laws, rules, and regulations.
- ENT 441** **4 (3,2)**
Structural Design: PR: ENT 342 and ENT 402. Design of mechanical and structural elements. Strength, fatigue, safety factors and code requirements.
- ENT 442** **3 (3,0)**
Design Integration: PR: ENT 343. Project design involving planning, control, prototype construction, testing and evaluation.
- ENT 432** **3 (3,0)**
Environmental Sampling and Analyses: Fundamental techniques applicable to sampling and performing lab analyses of our physical environment, including air, water and land. Interrelation and analysis of results.
- ENT 433** **3 (3,0)**
Air Pollution Control: Fundamental techniques applicable to analyzing composition and sources of pollutants, measuring concentrations, and controlling emissions. Air pollution control programs, laws, rules, and regulations.
- ENT 434** **3 (3,0)**
Solid Waste Management: Fundamental techniques applicable to technical projects involving solid waste composition, collection and disposal. Solid wastes programs, laws, rules, and regulations.

ENT

ENG

ENT 441 4 (3,2)
Structural Design: PR: ENT 342 and ENT 402. Design of mechanical and structural elements. Strength, fatigue, safety factors and code requirements.

ENT 442 3 (3,0)
Design Integration: PR: ENT 343. Project design involving planning, control, prototype construction, testing and evaluation.

ENT 443 3 (3,0)
Senior Project: PR: ENT 442. Individual project involving product conception, design, development, construction, and testing. A final technical report is required of each student.

ENT 451 3 (3,0)
Process Planning and Scheduling: Planning and control of specific tasks, and manhours related thereto. Includes description and application of techniques used in construction and manufacturing industries.

ENT 452 3 (3,0)
Occupational Safety: Accident prevention and the operation of an industrial safety program. Basic requirements of the Occupational Safety and Health Act standards.

ENT 453 3 (3,0)
Industrial Quality Control: Basic concepts and practices in industrial quality control. Technical specifications, measurement standards, inspection, and gaging. Process control techniques.

ENT 454 3 (3,0)
Plant Maintenance Operation: Organization of the maintenance function in manufacturing and service industries. Maintenance planning and scheduling analysis of required and preventive maintenance operations, including economic trade-offs.

ENGLISH

ENG 100 1 (1,0)
Vocabulary Study: A word skills course for students wishing to improve their vocabulary.

ENG 101 4 (4,0) F,W,S,Su
Composition I: Expository writing with emphasis on effective communication. Writing topics to be based on selected readings.

ENG 103 3 (3,0) F,W,S,Su
Exploring Literature Through Writing: PR: ENG 101 or equivalent. Writing practice based on readings in contemporary prose and poetry selected to invite the interest of students in literature.

Note on Freshman English Program:

ENG 101 and 103 may be taken to satisfy the State Department requirement for certification in secondary school teaching or for transfer to colleges that require one full year of Freshman English. Students who intend to major in English, English Education, or Library Science must take ENG 103. English Education and Library Science majors must complete ENG 202 before enrolling in any English courses numbered above 202 with the exception of ENG 301.

ENG 201 4 (4,0) F,W,S
Literature of Modern Man: Reading and discussion of types and forms of modern literature. Satisfies the requirement (II) of the cultural and historical foundation in the Environmental Studies Program.

- ENG 202** 3 (3,0) F,W,S
Literary Analysis: Analysis of fiction, drama, and verse in terms of major elements: plot, conflict, characterization, viewpoint, rhetorical and poetic devices, figurative language, meter, rhyme, verse forms.
- ENG 208** 3 (3,0) F,W,S
Principles of Creative Writing: An exploratory course in the several types of creative writing; group analysis of original writing; critical reading of established authors.
- ENG 209** 3 (3,0)
Introduction to Verse Writing: Practice in writing poetry; group analysis and criticism of work produced by individual students.
- ENG 210** 3 (3,0)
Introduction to Fiction Writing: Practice in writing the short story; group analysis and criticism of work produced by individual students.
- ENG 211** 3 (3,0) F,Su
Survey of English Literature to 1625
- ENG 212** 3 (3,0) F,W
Survey of English Literature, 1626-1798
- ENG 213** 3 (3,0) W,S
Survey of English Literature, 1798-1914
- ENG 300** 1 (1,0) F,W,S,Su
Composition For Accountants: Writing exercises for students majoring in Accountancy and planning to take the CPA examination.
- ENG 301** 3 (3,0) F,W,S,Su
Professional Report Writing I: Emphasis on clear expository writing of memoranda, reports and articles in the student's particular field.
- ENG 302** 3 (3,0) F
Creative Writing Workshop I: PR: C.I. Practice in established forms: essay, short story, and poetry.
- ENG 303** 3 (3,0) W
Creative Writing Workshop II: PR: ENG 302 or C.I. Individualized practice in writing in one of the established forms; analytic study of the work of pertinent authors.
- ENG 304** 3 (3,0) S
Creative Writing Workshop III: PR: ENG 303 or C.I. Individualized practice in writing in one of the established forms; analytic study of the work of pertinent authors.
- ENG 305** 3 (3,0) S
Structure of Verse: Intensive study of the structural characteristics of English poetry, metrical systems, rhyme, scansion, and poetic rhetorical devices.
- ENG 306** 3 (3,0)
Writing for Children: Practice in writing publishable literature for pre-school and elementary level children.
- ENG 307** 4 (4,0) F,
Writing Skills: Intensive practice in description, narration, exposition and argumentation; control of tone, mood, viewpoint, and level of diction. Applicable to article, essay, and short-story writing.

- ENG 308** 4 (4,0) W
Magazine Writing I: PR: ENG 307 or C.I. Structure and organization of articles, essays, profiles, and reviews; market analysis; data gathering.
- ENG 309** 4 (4,0)
Magazine Writing II: PR: ENG 308. Continuation of ENG 308.
- ENG 310** 3 (3,0) F,W,S,Su
Professional Report Writing II: Instruction and practice in scientific writing including preparation of scientific reports in the student's particular field.
- ENG 311** 3 (3,0) F,Su
Survey of American Literature, 1588-1865
- ENG 312** 3 (3,0) F,W
Survey of American Literature, 1865-1914
- ENG 313** 3 (3,0) W,S
Survey of American Literature Since 1914
- ENG 314** 3 (3,0) F,W
Survey of British Literature Since 1914
- ENG 316** 3 (3,0)
Continental European Fiction Since 1900: A selection of significant works of fiction written in various languages during the present century, read in translation.
- ENG 317** 4 (4,0) F
World Literature I: Poetry, prose, and drama selected from ancient Hebrew, Greek, and Oriental literature and from that of Renaissance Europe.
- ENG 318** 4 (4,0) W
World Literature II: Readings from Moliere, Voltaire, Goethe, Pushkin, Balzac, Tolstoy, Ibsen, Mann, Kafka, Camus, and others.
- ENG 320** 4 (4,0)
Women in Literature: An investigation of attitudes toward women in literature. Selections from Shakespeare, Eliot, Flaubert, Ibsen, Freud, Lawrence, Hemingway, Albee, Freidan, Millet, Greer, and Steinem.
- ENG 321** 3 (3,0) S
Exploring Poetry: A broad, cultural approach to poetry, with emphasis upon the major themes and preoccupations of poets of all ages. Students from all disciplines are welcome.
- ENG 325** 3 (3,0)
Science Fiction: An investigation of science fiction as a literary form, together with selected readings.
- ENG 361** 3 (3,0) S
Practical Criticism: Student evaluation of selected fiction, poetry, and drama through practical exercises in literary criticism.
- ENG 371** 3 (3,0)
Principles of Linguistics: An overview of the modern linguist's approach to language. Analytic methods of phonology, morphology, syntax. Brief systematic survey of dialectology, language acquisition and semantics.
- ENG 400** 3 (3,0)
Writing About Literature: Supplies background for recognizing literary allusions and

technical terms, assures acquaintance with professional literary journals, and provides supervision of student critical writing.

- ENG 401** **3 (3,0) F**
Writing Practicum I: PR: C.I. Intensive writing practice in fiction, non-fiction, or verse.
- ENG 402** **3 (3,0) W**
Writing Practicum II: PR: ENG 401. Continuation of ENG 401.
- ENG 403** **3 (3,0) S**
Writing Practicum III: PR: ENG 402. Continuation of ENG 402.
- ENG 404** **3 (3,0)**
Writing Fiction I: PR: Evidence of writing skill satisfactory to the instructor. Analysis of significant fiction; market research; intensive writing practice leading to a completed body of fiction writing suitable for publication.
- ENG 405** **3 (3,0)**
Writing Fiction II: PR: ENG 404. Continuation of ENG 404.
- ENG 410** **3 (3,0)**
Ethnic Literature in America: Contributions of linguistic and ethnic groups of non-English origin to the literature of the United States.
- ENG 415** **3 (3,0) F,W**
Readings in Shakespeare: Reading and analysis of a selected group of comedies, histories, and tragedies for English Education majors.
- ENG 428** **4(4,0)**
Doubt and Belief (19th Century Literature): English, American, and Continental literature, 1832-1870, especially designed for undergraduate students.
- ENG 430** **3 (3,0)**
Chaucer: *The Canterbury Tales*, *Troilus and Criseyde*, and other works.
- ENG 432** **4 (4,0)**
Shakespeare's Histories: Reading and discussions of Shakespeare's histories, especially designed for undergraduate students.
- ENG 434** **3 (3,0)**
Milton: *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, shorter poems and selected prose.
- ENG 444** **3 (3,0)**
The British Novel in the 18th Century
- ENG 445** **3 (3,0)**
The British Novel in the 19th Century
- ENG 446** **3 (3,0)**
The American Novel in the 19th Century
- ENG 451** **3 (3,0)**
British and American Fiction Since 1900
- ENG 452** **3 (3,0)**
British and American Poetry Since 1900
- ENG 453** **3 (3,0)**
British and American Drama Since 1900

- ENG 460** **3 (3,0)**
Historical Survey of Literary Criticism: Study of the major critics from classical antiquity through the modern era.
- ENG 471** **3 (3,0) F**
Modern English Grammar: Methods in the study of modern English grammar. Emphasis upon the analysis and comparison of traditional, structural, and transformational grammar.
- ENG 473** **3 (3,0) W**
Transformational Grammar: PR: ENG 471. Introduction to philosophical basis of transformational grammar. Students will develop grammar for modern English.
- ENG 483** **3 (3,0)**
Black English: A study of the phonology, morphology, and syntax of Black English. Provides an understanding of the implications of Black English in contemporary society.
- ENG 501** **4 (4,0)**
Linguistics: Modern linguistic theories and studies focusing on language acquisition and development, contemporary American English, semantics, and paralinguistics.
- ENG 508** **4 (4,0)**
Rhetoric and Literature: Investigates the development of written strategies of persuasion. Traces their relation to practical and imaginative literature. Applications to classroom teaching of literature and composition.
- ENG 520** **4 (4,0)**
Studies in Contemporary Fiction: Fiction of the last 20 years in the United States and Britain.
- ENG 521** **4 (4,0)**
English Renaissance Literature I: Elizabethan poetry and prose, 1588-1603.
- ENG 522** **4 (4,0)**
English Renaissance Literature II: Jacobean and Caroline poetry and prose, 1603-1642.
- ENG 523** **4 (4,0)**
English Renaissance Literature III: Commonwealth poetry and prose, 1642-1660, including Milton.
- ENG 524** **4 (4,0)**
Studies in Restoration English Literature: Literature of the Restoration.
- ENG 525** **4 (4,0)**
English Literature, 1700-1745: Prose and poetry of the first half of the 18th. Century.
- ENG 526** **4 (4,0)**
English Literature, 1745-1798: Prose and poetry of the last half of the 18th. Century.
- ENG 527** **4 (4,0)**
The Romantic Revolt (19th. Century Literature): The romantic revolt in poetry and prose: English, American, and Continental literature, 1798-1832.
- ENG 528** **4 (4,0)**
Doubt and Belief (19th. Century Literature): English, American, and Continental literature, 1832-1870.
- ENG 529** **4 (4,0)**
Decadence and Renewal (19th. Century Literature): English, American, and Continental literature, 1870-1914.

- ENG 531 4 (4,0)
Shakespeare's Comedies
- ENG 532 4 (4,0)
Shakespeare's Histories
- ENG 533 4 (4,0)
Shakespeare's Tragedies
- ENG 541 4 (4,0)
English Drama to 1642 (exclusive of Shakespeare)
- ENG 542 4 (4,0)
Restoration and 18th. Century English Drama
- ENG 561 4 (4,0)
Use and Enjoyment: Criticism from Plato to Johnson.
- ENG 562 4 (4,0)
Modern Theories of Literature: Criticism since 1800.
- ENG 572 4 (4,0) S
History of the English Language: Study of the English language and its development from Anglo-Saxon to Modern.
- ENG 610 4 (4,0)
Literary Genres: Provenance, structure and critical problems in a specific genre such as tragedy, the epic, the novel, or the lyric.
- ENG 620 4 (4,0)
World Literature: The study of the influence on British and American literature of selected foreign works read in translation.
- ENG 630 4 (4,0)
Movements in Literature: Study of a movement such as naturalism, romanticism, or classicism, or a pervasive idea such as the absurd.
- ENG 640 4 (4,0)
Problems in Linguistics: PR: ENG 501. In-depth study of the application of linguistics to various aspects of teaching and communication.
- ENG 650 4 (4,0)
Major Literary Authors: Study of a single author or of two or three associated literary authors, with emphasis on biography, bibliography, and style.
- ENG 660 4 (4,0)
Media and Popular Literature: Study of the literary content of contemporary media; popular fictions, such as science fiction, detective fiction, and historical fiction. Application to classroom teaching.
- ENG 680 4 (4,0)
Practicum: The Teaching of Literature: Close work with an experienced instructor in teaching an undergraduate literature course, combined with regular group meetings for discussion of problems of teaching literature.
- ENG 685 4 (4,0)
Practicum: The Teaching of Composition: Close work with an experienced instructor in teaching an undergraduate composition course, combined with regular group meetings for discussion of problems of teaching composition.

ENVIRONMENTAL STUDIES PHYSICAL EDUCATION

The Environmental Studies Physical Education Program is designed to enhance the physical and mental development of the student. A student may receive three quarter hours credit toward graduation by enrolling and satisfactorily completing any one of the following courses:

ESPE 301 3 (2,2) F,S,Su

Aquatics: A study and application of the physiological benefits of basic aquatic developmental skills — elementary and advanced strokes, water safety, springboard diving, and interval training.

ESPE 302 3 (2,2) F,W,S,Su

Body Development: A study and application of the metabolic, neuromuscular, and cardiovascular changes resulting from select physical activities.

ESPE 304 3 (2,2) F,W,S,Su

Golf: A study of performance and application in basic and advanced skills, rules, and etiquette. Physiological and social values accruing from this carry-over activity.

ESPE 305 3 (2,2) F,W,S,Su

Tennis: A study of performance and application in basic and advanced skills, rules, and etiquette. Physiological and social values accruing from this carry-over activity.

ESPE 306 3 (2,2) S,Su

Life Saving: Instruction, training and certification in basic life saving swimming skills.

ESPE 307 3 (2,2) Su

Scuba Diving: Instruction, training and certification in basic diving skills with self-contained underwater breathing apparatus. Students may be required to supply their own equipment.

ESPE 308 3 (2,2) W,Su

Interpretive Dance: Instruction and analysis of creative dance performance as an art form.

ESPE 483 3 (3,0) F,W,S,Su

Actualization of Physical Potential in Contemporary Living: Factors underlying physical potential. Self physical assessment, values of physical activity, self-improvement, contemporary problems, body awareness, body mechanics, family responsibilities. Development of individual program.



F

FINANCE

- FIN 301** 5 (5,0) F,W,S,Su
Finance: PR: ACCY 212 or ACCY 300, ECON 202 and ECON 203. Fundamentals of obtaining and administering funds to meet short-term and long-term capital requirements.
- FIN 311** 4 (4,0)
Risk and Insurance: PR: Junior Standing or C.I. Principles and methods of risk reduction and specialization, with particular emphasis on insurance.
- FIN 321** 4 (4,0)
Investments: PR: FIN 301 or C.I. Principles of determining investment policy for individual and institutional portfolios.
- FIN 331** 4 (4,0) F,W,S,Su,
Money and Banking: PR: ECON 203 or C.I. The nature of money, the functioning of the commercial banking system and its relation to the level of economic activity, and the activities of the Federal Reserve System and Treasury.
- FIN 341** 4 (4,0)
Real Estate: PR: Junior standing. Basic principles of real estate ownership, its use and transfer, brokerage, management, legislation, and importance to the economy.
- FIN 351** 4 (4,0)
Financial Institutions: PR: FIN 301. The operation of financial institutions and an analysis of their role in the economy.
- FIN 421** 4 (4,0) F,W,S,Su
Investments: PR: FIN 301 or C.I. Principles of determining investment policy for individual and institution portfolios.
- FIN 431** 4 (4,0)
Financial Management: PR: FIN 301. Analytical techniques for dealing with financial problems and their application to corporate financial management.
- FIN 501** 4 (4,0)
Financial Concepts: PR: Acceptance into the MBA Program. Effects of financial decisions upon the firm, interrelationships of these effects, and alternatives available to financial managers in meeting financing needs of the firm.
- FIN 601** 3 (3,0)
Capital Management and Analysis: PR: Graduate standing and FIN 501 or equivalent. Financial planning, valuation, sources of long-term capital, concepts of cost of capital and capital budgeting.
- FIN 611** 3 (3,0)
Financial Management of Current Operations: PR: Graduate standing and FIN 501 or equivalent. Management of current assets and current liabilities. Special problems associated with expansion, contraction, merger and failure.
- FIN 631** 3 (3,0)
Analysis of Investment Opportunities: PR: Graduate standing and FIN 501 or equivalent. Techniques for evaluating securities, investment decision making, and portfolio management.

FOREIGN LANGUAGES

FL 323

4 (4,0)

Comparative World Literature I: Masterworks of world literature in translation from the Book of Job to Cervantes. Authors include Homer, Sophocles, Cicero, Virgil, St. Augustine, Dante, Chaucer, Montaigne, and Shakespeare.

FL 324

4 (4,0)

Comparative World Literature II: Continuation of FL 323, Renaissance to 20th Century, including Pascal, Milton, Rousseau, Goethe, Wordsworth, Poe, Balzac, Chekov, Baudelaire, Yeats, Mann, and Camus. Need not be taken in sequence with FL 323.

FORENSIC SCIENCE

FSC 300

4 (4,0)

Introduction to Forensic Science: Intended for nonmajors to provide an appreciation for the ways in which science serves the civil and criminal justice system.

FSC 301

4 (2,6)

Criminalistics I: PR: CHEM 263 or C.I. Examination and evaluation of evidence obtained from suspect criminal actions, including the microscopy of trace evidence.

FSC 302

4 (2,6)

Criminalistics II: PR: FSC 301. Continuation of FSC 301.

FSC 305

4 (2,6)

Civilistics: PR: FSC 301. Examination and evaluation of evidence obtained from suspect civil actions involving water and air pollution, public safety, and product design.

FSC 356

4 (2,6)

Forensic Analysis Techniques: PR: CHEM 352. Study of separation, purification, quantitative, and instrumental techniques in drug and narcotic analysis toxicology, blood factor, and enzyme identification.

FSC 470

4 (0,40)

Forensic Science Internship: PR: C.I. Credit for full-time work (10-12 Weeks) in a professional forensic laboratory. This course may be repeated for credit.

FRENCH

FRE 100

1 (1,0)

French Diction: This course is especially designed for music and voice students with an emphasis on musical terms, French songs and opera libretti.

FRE 101

4 (4,1) F

Elementary French Language and Civilization: Designed to initiate the student to the major language skills; listening, speaking, reading, and writing, in addition to an introduction to French culture.

FRE 102

4 (4,1) W

Elementary French Language and Civilization: PR: FRE 101 or equivalent. Continuation of FRE 101.

FRE 103

4 (4,1) S

Elementary French Language and Civilization: PR: FRE 102 or equivalent. Continuation of FRE 102.

- FRE 201** 4 (4,1) F
Intermediate French Language and Civilization: PR: FRE 103 or equivalent. Development of language skills at the intermediate level, review of grammar, study of syntax, idiomatic expressions, study of French culture.
- FRE 202** 4 (4,1) W
Intermediate French Language and Civilization: PR: FRE 201 or equivalent. Continuation of FRE 201.
- FRE 203** 4 (4,1) S
Intermediate French Language and Civilization: PR: FRE 202 or equivalent. Continuation of FRE 202 with greater emphasis on French civilization from the Middle Ages to the present.
- FRE 301** 4 (4,1) F
French Conversation: PR: FRE 203 or equivalent. Development of skills in conversation and comprehension. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- FRE 303** 4 (4,0)
French Composition: PR: FRE 203 or equivalent. Development of skills in composition. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- FRE 311** 4 (4,0) F
Survey of French Literature I: PR: FRE 203 or equivalent. Main literary currents and works from the Middle Ages through the Renaissance.
- FRE 312** 4 (4,0) W
Survey of French Literature II: PR: FRE 203 or equivalent. Main literary currents and works of the seventeenth and eighteenth centuries.
- FRE 313** 4 (4,0) S
Survey of French Literature III: PR: FRE 203 or equivalent. Main literary currents and works of the nineteenth and twentieth centuries.
- FRE 321** 4 (4,0)
Short Stories of 18th, 19th and 20th Centuries: PR: FRE 203 or equivalent. Selected readings designed to increase reading speed and develop analytical abilities. Authors include: Voltaire, Maupassant, Flaubert, Camus and others.
- FRE 401** 4 (4,0)
French Phonetics and Diction: PR: FRE 303 or equivalent. French phonology with emphasis on phonic groupings.
- FRE 402** 4 (4,0)
Advanced French Conversation: PR: FRE 301. Advanced conversation on directed topics from various disciplines: Literature, art, psychology, philosophy, music, business and the sciences.
- FRE 403** 4 (4,0)
Advanced French Composition: PR: FRE 303. Readings and written imitations of modern literary styles in the form of themes, sketches, poems and original stories.
- FRE 422** 4 (4,0)
Seventeenth Century French Theater: PR: FRE 312. Corneille, Racine, and Moliere. A study of the lives and principal works of the authors.
- FRE 431** 4 (4,0)
French Literature of the Eighteenth Century: PR: FRE 312. The philosophical movement: Montesquieu, Vauvenargues, Voltaire, Diderot, Buffon.

FRE**GEOL**

- FRE 441** 4 (4,0)
Romantic Poetry and Drama: PR: FRE 312. Great poets and dramatists of the Romantic Movement: Hugo, Lamartine, Vigny, Musset and others.
- FRE 442** 4 (4,0)
The Romantic Novel: PR: FRE 312. A study of several novels of the early nineteenth century which characterizes the Romantic movement.
- FRE 443** 4 (4,0)
Nineteenth Century French Literature: PR: FRE 313. Realism and naturalism.
- FRE 444** 4 (4,0)
Nineteenth Century French Literature: PR: FRE 313. Parnassianism and symbolism.
- FRE 451** 4 (4,0)
Twentieth Century French Literature: Contemporary French drama and poetry.
- FRE 453** 4 (4,0)
Twentieth Century French Literature: PR: FRE 313. Contemporary French novel.
- FRE 481** 4 (4,0)
Stylistics: PR: FRE 301 or equivalent. An intense study of textual criticism. An examination of the relationship between language and literature; explications and linguistic analysis of literary texts.

G

GEOGRAPHY, PHYSICAL

- GEOG 100** 4 (4,0)
Physical Geography: Basic physical elements of geography including climate, landforms, soils, natural vegetation, minerals and their integrated patterns of world distribution.
- GEOG 301** 3 (3,0)
Resources Geography: Analysis of basic principles and problems associated with development, use, conservation, and management of natural resources with special emphasis on the United States.

GEOGRAPHY, SOCIAL

- GEOG 350** 4 (4,0)
Urban Geography: The city as a geographical phenomenon created by human effort, its historical development; patterns of land use as related to economic, sociological and political influences. (Same as PCL 324).
- GEOG 360** 4 (4,0)
World Political Geography: Analysis of the types and distributions of political systems; review of factors which affect relative power of diverse politics, areas of conflict and arbitration. (Same as PCL 322).

GEOLOGY

- GEOL 100** 4 (4,0) F,W
Geology and Its Applications: Survey of geologic applications and hazards including:

GEOL

GER

gemstones, geothermal energy, fossil fuels, groundwater, sinkhole, beach erosion, landslides, earthquakes, "tidal" waves, volcanism. Appropriate for Environmental Studies.

GEOL 105

4(4,0) S

Historical Geology: Lunar and planetary histories, evolution of earth's crust including drifting continents and mountain building, evolution of life as reconstructed from fossils. Appropriate for Environmental Studies.

GEOL 201

4 (2,4) W

Physical Geology: PR: GEOL 100. Geologic principles and recent theories developed in some depth with the aid of rock and mineral samples and geologic maps.

GERMAN

GER 100

1 (0,1)

German Diction: This course is especially designed for music and voice students with an emphasis on musical terms, German songs and opera libretti.

GER 101

4 (4,1) F

Elementary German Language and Civilization: Designed to initiate the student to the major language skills; listening, speaking, reading, and writing, in addition to an introduction to German culture.

GER 102

4 (4,1) W

Elementary German Language and Civilization: PR: GER 101 or equivalent. Continuation of GER 101.

GER 103

4 (4,1) S

Elementary German Language and Civilization: PR: GER 102 or equivalent. Continuation of GER 102.

GER 201

4 (4,1) F

Intermediate German Language and Civilization: PR: GER 103 or equivalent. Designed to continue development of language skills at the intermediate level, together with a review of grammar, idiomatic expressions, extensive reading, and further study of German culture.

GER 202

4 (4,1) W

Intermediate German Language and Civilization: PR: GER 201 or equivalent. Continuation of GER 201.

GER 203

4 (4,1) S

Intermediate German Language and Civilization: PR: GER 202 or equivalent. Continuation of GER 202 with greater emphasis on German civilization from the Middle Ages to the present.

GER 301

4 (4,0)

German Conversation: PR: GER 203 or equivalent. Development of skills in conversation and comprehension through practice. This course may be repeated for credit. When repeated, credit will apply to general electives only.

GER 303

4 (4,0)

German Composition: PR: GER 203 or equivalent. Development of skills in composition. This course may be repeated for credit. When repeated, credit will apply to general electives only.

GER 311

4 (4,0)

Survey of German Literature I: PR: GER 203 or equivalent. Main literary currents and works from the Middle Ages through the Renaissance and Baroque.

GER 312

4 (4,0)

Survey of German Literature II: PR: GER 203 or equivalent. Main literary currents and works of the 17th and 18th centuries.

GER 313

4 (4,0)

Survey of German Literature III: PR: GER 203 or equivalent. Main literary currents and works of the 19th and 20th centuries.

GER 321

4 (4,0)

Short Story: PR: GER 203 or equivalent. German short prose works of the 19th and 20th centuries.



H

HISTORY

HIST 201

4 (4,0) F,W,S

Western Culture and Civilization I: Rise of culture and civilization in the West from earliest times to the eve of the Renaissance.

HIST 202

4 (4,0) F,W,S

Western Culture and Civilization II: Continuation of HIST 201. Europe from its feudal-manorial state through the Napoleonic era.

HIST 203

4 (4,0) F,W,S

Western Culture and Civilization III: Continuation of HIST 202. The Romanic era, the influence of liberalism, nationalism, and modern industrialism upon political, social, economic, and intellectual life.

HIST 210

4 (4,0)

Introduction to Anglo-American Law: An historical survey of the development of the principles and processes of the American law from its origins in English common law to the present. (Same as LES 201).

HIST 301

4 (4,0)

Age of Transition: A survey of social, economic, political, religious, and cultural developments in Europe from the fall of Rome to the 10th century. (Formerly HIST 353).

HIST 302

4 (4,0)

Medieval Society and Civilization: A survey of social, economic, political, religious, and cultural developments in Europe from the 10th to the 13th centuries. (Formerly HIST 354).

HIST 305

4 (4,0)

Enlightenment and Religious Revival: Science and political absolutism; the Enlightenment and the *philosophes*: secularism, cosmopolitanism and humanitarianism; the French Revolution; religious revival, and the beginning of romanticism. (Formerly HIST 301).

HIST 306

4 (4,0)

Age of Revolution and Napoleon: Causes and course of the revolution; the rise and fall of Napoleon; impact on the thought and action of Western Europe. (Formerly HIST 457).

HIST 307

4 (4,0)

Romanticism and Realism: Napoleon and nationalism; new ideas: conservation; liberalism, romanticism, republicanism and socialism; urbanization, technology and mass culture; religious decline; *Realpolitik*, racism, imperialism and militarism. (Formerly HIST 302).

HIST 308

4 (4,0)

The Rise of Mass Culture and Democracy, 1890-1930: Europe in the era of modern technology, militarism, the First World War, Paris Peace Conference, popular culture, and new democratic institution east of the Rhine. (Formerly HIST 445).

HIST 309

4 (4,0)

Second World War and Rebirth of Europe: Origins of World War II; Hitler's "New Order," and resistance movements; Cold War; de-Stalinization in Russia; Sovietization of East Central Europe; Western reconstruction, and prosperity. (Formerly HIST 447).

HIST 311

4 (4,0) F,W,S

American Economic History: An introduction to the economic development of the United

States with emphasis upon agriculture, labor, industrialization, transportation, and banking. (Same as ECON 307).

HIST 312 **4 (4,0) F,W,S**

American Political History: An introduction to political life in the United States with emphasis upon the three branches of government, political parties, and the federal system.

HIST 313 **4 (4,0) F,W,S**

American Social History: An introduction to the effect of social change on Americans and their political institutions. Emphasis is placed on demographic, sexual and technological change.

HIST 320 **4 (4,0)**

The Changing Frontier in American History: A survey of the types and geographic settings of the frontiers. Attention given to the impact of the frontier on American History.

HIST 322 **4 (4,0)**

U.S. Constitutional History I: Development of the constitutional system and the idea of Constitutionalism from the colonial emphasis on written contracts and natural law through "nullification" and Civil War.

HIST 323 **4 (4,0)**

U.S. Constitutional History II: Post-war constitutional changes; the curious role of the 14th amendment; expansion of national power over the economy and civil rights; increasing popular belief in "Constitutionalism."

HIST 324 **4 (4,0)**

Black American History: History of Negroes from their African heritage through American Slavery to freedom and their role in 20th. Century America.

HIST 326 **4 (4,0)**

History of Florida to 1845

HIST 327 **4 (4,0)**

Florida History 1845 - Present

HIST 328 **4 (4,0) W**

History of the South to 1865: Development of the southern colonies, beginning of sectionalism, the cotton economy, slavery, Calhoun's constitutional theories, secession, Civil War and its aftermath.

HIST 329 **4 (4,0) S**

History of the South Since 1865: Reconstruction, the "solid South" and the racial dilemma, progressivism for whites only, southern literature, 20th century economic, political, and social changes, and the new Reconstruction.

HIST 330 **4 (4,0) F**

Latin American History: The Colonial Period: A survey course in Latin American History to the beginning of the Wars of Independence in 1810.

HIST 331 **4 (4,0) W**

Latin American History: The 19th Century: Continuation of HIST 330.

HIST 332 **4 (4,0) S**

Latin American History: The 20th Century: Continuation of HIST 331.

HIST 333 **4 (4,0)**

Spanish Borderlands: Survey of Spanish settlement in South and Southwestern U.S. with emphasis upon cultural conflicts found in the imperial rivalries for control of the area.

- HIST 351** 4 (4,0)
The Classical World: Greece: History and culture of Greece from the Minoan-Mycenaean to the Hellenistic age, with emphasis on contributions in art, literature and philosophy. (Same as HUM 351).
- HIST 352** 4 (4,0)
The Classical World: Rome: History and culture of Rome from the Etruscan Period to the dissolution of the empire, with emphasis on contributions in architecture, law and literature. (Same as HUM 352).
- HIST 355** 4 (4,0)
Renaissance and Reformation: The influence of Renaissance humanism on arts, letters, and politics; Luther and Protestantism; the Catholic Counter-Reformation and the Thirty Years' War.
- HIST 370** 4 (4,0)
Survey of East Asia: An introduction to Far Eastern cultures including India since the Age of the Moguls, China since early European penetration, Japan since the Hermit Kingdom. (Formerly HIST 304).
- HIST 411** 4 (4,0)
Colonial America, 1607-1763: The voyages of discovery, the origins of the thirteen colonies, and their political, economic, social, and religious life in the 17th and 18th centuries.
- HIST 412** 4 (4,0)
The Age of the American Revolution, 1763-1789: The American Revolution — its origins, course, and impact upon American society — the Articles of Confederation, the Philadelphia Convention and its work.
- HIST 413** 4 (4,0)
Age of Jefferson: The writing of the Constitution, the Federalist decade, Jeffersonian Democracy, the War of 1812, and emergence of New Nationalism.
- HIST 414** 4 (4,0)
Reign of Jackson: Administration of Andrew Jackson to the Civil War.
- HIST 415** 4 (4,0)
Civil War and Reconstruction: Reconstruction, and impact of industrialism.
- HIST 416** 4 (4,0)
Robber Baron Era: The Agrarian Revolt, the Spanish-American War, and the Progressive Era.
- HIST 417** 4 (4,0)
United States History: 1914-1940: The Progressive Reforms of Woodrow Wilson, World War I, post-war prosperity, the Depression, and the New Deal.
- HIST 418** 4 (4,0)
United States History: 1941-Present: Contemporary America from World War II.
- HIST 420** 4 (4,0)
United States Diplomatic History: 1776-1914: A study of the evolution of basic American policies, American expansion and America's major wars with emphasis upon the international background.
- HIST 421** 4 (4,0)
United States Diplomatic History: 1914-Present: A study of the response of American diplomacy, the breakdown of the European equilibrium, the scientific revolution and the challenge of the totalitarian dictatorships.

- HIST 422** 4 (4,0)
American Culture I: The European Backgrounds; Puritanism; Enlightenment; the Great Awakening; Revolutionary Thought; Romanticism; the Southern Mind and the Yankee Response; Popular Culture and the rise of recreation.
- HIST 423** 4 (4,0)
American Culture II: The Darwinian Revolution; revolt of the intellectuals; the media explosion; mass entertainment in mass culture; the loss of community, the nuclear age, and presentism.
- HIST 424** 4 (4,0)
European Diplomatic History: 1815-1914: The relationship of the European great powers from the Congress of Vienna to the outbreak of the First World War.
- HIST 425** 4 (4,0)
European Diplomatic History: 1914-Present: The relationship of the European great powers from the outbreak of the First World War to the present.
- HIST 435** 4 (4,0)
China in 19th and 20th Centuries: The Mongols in China; coming of the Europeans; social structure; Communist movement; Japanese aggression.
- HIST 439** 4 (4,0)
Modern Japan, 19th and 20th Centuries: A survey of the Tokugawa Shogunate; Western contact in the 19th century; World War I; Japanese militarism; World War II; and U.S. occupation.
- HIST 441** 4 (4,0)
The Rise of Modern Germany: Central Europe from the Reformation to 1890: The Thirty Years' War and absolute despotism; AustroPrussian rivalry; the German Enlightenment, Bismark and the Second Reich.
- HIST 442** 4 (4,0)
Hitler's Third Reich: German nationalism and militarism; World War I and the Versailles Treaty; the Weimar Republic and the rise of the Nazis; Second World War, division and recovery.
- HIST 446** 4 (4,0)
Fascism and the Totalitarian Dictatorships: Totalitarian ideologies, institutions, and practices in Lenin's and Stalin's Russia, Mussolini's Italy, and Hitler's Third Reich; fascist movements in the non-totalitarian states.
- HIST 458** 4 (4,0)
France, 1815-1914: Legacy of the French Revolution; Revolutions of 1830 and 1848; Franco-Prussian War and Third French Republic; Franco-German Rivalry and formation of the Entente.
- HIST 459** 4 (4,0)
France, 1914-Present: World War and aftermath; Locarno spirit; rise of Fascism and French response, World War II; Fourth Republic and Reconstruction; deGaulle and the Fifth Republic.
- HIST 461** 4 (4,0)
English History to 1485
- HIST 462** 4 (4,0)
English History: 1485-1815
- HIST 463** 4 (4,0)
British History: 1815-Present

- HIST 464** 4 (4,0)
British Empire and Commonwealth: Development of the British Empire and Commonwealth since the American Revolution.
- HIST 466** 4 (4,0)
British History: Tudor-Stuart Period: A study of the Tudor-Stuart period, with particular emphasis on the civil/religious conflicts of the time.
- HIST 470** 4 (4,0)
History of Russia to 1801: Kievan State; Mongol Yoke; Development of Muscovite Expansionism and Absolutism; Time of Troubles; Westernization of Russia under Peter I and Catherine; Role of Orthodox Church.
- HIST 471** 4 (4,0)
History of Russia: 1801-1917: Alexander I; Napoleonic Invasion; Revolutionary Movement; Russian Policy toward Central Asia and China; Great Reforms; Russo-Japanese War; Revolution of 1905; Constitutional Period; Triple Entente.
- HIST 472** 4 (4,0)
History of the Soviet Union: 1917-Present: First War; 1917 Revolutions; Civil War; New Economic Policy; Stalin-Trotsky Struggle; Collectivization; Stalinist Purges; Second War; Post-Stalin Russia; Khrushchev; Sino-Soviet Relations.
- HIST 473** 4 (4,0)
Soviet Foreign Policy: 1917 to Present: Begins with Comintern policy, establishment of relations with capitalist countries, rise of Fascism, World War II, post-Stalin foreign policy.
- HIST 480** 4 (4,0)
History and Historians: PR: C.I. A study of European and/or American historiography. May be repeated once for credit.
- HIST 501** 2-5 (2-5,0)
Studies in American History: Advanced investigations into specific areas of American History. May be repeated for credit.
- HIST 510** 2-5 (2-5,0)
Studies in World History: Advanced investigations into specific areas of World History. May be repeated for credit.

HUMANITIES

- HUM 201** 4 (4,0) F,W,S,Su
Landmarks in Western Humanities: Selected examples of man's creative achievements in literature, philosophy, art, music; inter-related to enlarge understanding of the nature of man and appreciation of human values.
- HUM 351** 4 (4,0)
The Classical World: Greece: History and culture of Greece from the Minoan-Mycenaean to the Hellenistic age, with emphasis on contributions in art, literature and philosophy. (Same as HIST 351).
- HUM 352** 4 (4,0)
The Classical World: Rome: History and culture of Rome from the Etruscan Period to the dissolution of the empire, with emphasis on contributions in architecture, law and literature. (Same as HIST 352).
- HUM 401** 4 (4,0) F
The Ideal of Nature in the Arts: The search for identity with nature revealed in the arts of

various times and cultures. Concerns feeling, imagination, subjectivity, creativity. Open to all upperclassmen.

HUM 402**4 (4,0) W**

The Classical Ideal in the Arts: The search for order and form reflected in the arts of Greece and later cultures. Concerns reason, structure, objectivity, harmony. Open to all upperclassmen.

HUM 403**4 (4,0) S**

The Spiritual Ideal in the Arts: The search for the meaning and experience of the sublime reflected in the arts. Spiritual impulses contrasted to pathos and ethos. Open to all upperclassmen.

HUMANITIES AND FINE ARTS

HFA 416**6-15**

Supervised Special Training: Supervised special work experience. Open to students combining a major in Humanities and Fine Arts with Business Administration. Must be arranged in advance of registration.

HFA 490**3 (3,0)**

Senior Seminar: Humanities and Arts in Human Affairs: Forum on the art and thought of the contemporary world. Intended for senior students. Offered as Advanced Environmental Studies seminar.



INDUSTRIAL ENGINEERING AND MANAGEMENT SYSTEMS

IEMS 301

4 (3,2) F

Management Standards: CR: ENGR 341 or equivalent. Management standards for evaluation and control of man and man-machine systems. Flow and operation analysis, work measurement, job evaluation, wage determination techniques. Laboratory assignments.

IEMS 311

4 (4,0) Su

Engineering Law: PR: Junior standing. Influence of contract, property and tort law, upon engineering activities; contracts, agency, partnerships, corporations, liens and expert testimony. Patents and licensing.

IEMS 332

3 (3,0) Su

Statistical Quality Control: Statistical concepts and methods applied to the control of quality of manufactured products. (Same as STAT 332).

IEMS 412

4 (4,0) W

Safety Engineering: PR: Junior standing. Basic principles of accident prevention in relation to hazards within workplace environment including machinery, flammable materials, pressure vessels and electrical hazards.

IEMS 413

4 (4,0)

Safety Administration: Organization of safety programs. Motivating safety habits and safety consciousness. Organizational aspects of accident prevention. Safety information systems and accident costs.

IEMS 414

4 (3,2) S

Industrial Facilities Planning Design: PR: IEMS 301. Comprehensive design of industrial production systems including inter-relationships of plant location, process design, and materials handling. Laboratory assignments using computer and scale models.

IEMS 422

3 (2,2) Su

Network Analysis: PR: ENGR 442. Development, application and computerized analysis of networks for systems analysis and control. Applications of CPM, PERT, GERT, and maximal flow concepts.

IEMS 424

3 (3,0) F

Management Control Systems: PR: ENGR 371. Management decision rules including mathematical and economic models of forecasting, scheduling, order, and inventory control problems. Lab assignments using computer algorithms.

IEMS 431

3 (3,0) F

Engineering Applications of Computer Methods: PR: COMP 302 or equivalent. Structuring engineering problems for computers including computer characteristics and performance measure. Introduction to time sharing and computer aided design. Case studies and laboratory assignments.

IEMS 432

3 (2,2) S

System Simulation with Digital Computers: PR: COMP 102 or equivalent. Methods and procedures for simulating large scale systems with digital computers, FORTRAN, CSMP and GPSS programming languages are used.

- IEMS 434** **3 (3,0) W**
Industrial Information Systems: PR: COMP 102 or 302, IEMS 424. Study of computerized information systems applied to manufacturing operations. Emphasis on development of automated information systems for control of men, materials and equipment. Laboratory assignments.
- IEMS 441** **4 (4,0)**
Mathematical Systems Theory I: PR: MATH 331 and Senior standing. Concepts of linear systems analysis. Introduction to state and space techniques. Stable and unstable behavior of linear systems.
- IEMS 447** **3 (3,0) W**
Numerical Methods in Systems Analysis: PR: ENGR 371. Application of vector space and matrix concepts to systems problems. Analysis of linear transformations and simultaneous linear equations. Introduction to finite Markov processes.
- IEMS 450** **4 (3,2) W**
Biomedical Engineering: PR: ENGR 342 or C.I. Engineering description and analysis of living systems. Systems Analysis and its application to biomedical and ecological systems. Laboratory assignments.
- IEMS 461** **3 (2,2) S**
Human Engineering: PR: Senior standing. Man-machine systems; design and conduct of human engineering studies.
- IEMS 463** **4 (4,0)**
Occupational Health: Industrial health hazards and occupational diseases. Control of health hazards; substitution of less toxic materials, process changes, segregation of hazardous processes, noise control, radiation hazards.
- IEMS 470** **3 (3,0)**
Introduction to Public Systems Analysis: PR: ENGR 371 or equivalent. Application of probability and statistics to the analysis of public systems data. Operations research models and applications; economic decision-models; cost/benefit analysis.
- IEMS 502** **3 (3,0) F**
Probability for Engineers: PR: ENGR 371. Engineering application of probability, combinatorial analysis, sample space, events, probability, discrete and continuous random variables, and probability distributions. (Same as STAT 535).
- IEMS 503** **3 (3,0) W**
Statistics for Engineers: PR: ENGR 371. Engineering application of statistics, significance tests and confidence intervals, tests of hypotheses, simple and multiple regression and correlation. (Same as STAT 536).
- IEMS 510** **4 (3,2)**
Industrial Fire Protection Engineering I: PR: Consent of instructor. Chemistry of combustion, fire hazards properties of materials, storage and handling. Fire protection standards, codes and regulations. Building and facilities design and construction.
- IEMS 512** **4 (3,2)**
Industrial Security Systems Engr: PR: Consent of instructor. Consideration of security threats. Methods of detection/control with emphasis on design and layout of automatic alarm systems for intrusion detection.
- IEMS 521** **3 (3,0) W**
Engineering Reliability and Quality Assurance: PR: IEMS 332 or C.I. Design and management of reliability programs and quality assurance systems; mathematics of reliability.

- IEMS 532** 4 (4,0) S
Management Information Systems I: PR: IEMS 434 or C.I. The design and implementation of computer-based Management Information Systems. Consideration is given to the organizational, managerial and economic aspects of MIS.
- IEMS 541** 4 (4,0) F
Mathematical Systems Theory II: PR: IEMS 441 or equivalent. Introduction to non-linear analysis. Approximation methods and numerical solutions. Stability of non-linear systems. Systems examples to be taken from engineering, environmental science, and economics.
- IEMS 550** 4 (3,2)
Biomedical Instrumentation: PR: ENGR 342 or C.I. Theory and techniques of biological instrumentation systems including transducers and computers applications. The nature of biological signals, their detection, analysis and display.
- IEMS 561** 3 (2,2)
Human Performance: PR: IEMS 461 or C.I. A study of the factors affecting human acquisition of skills and level of performance attained. Includes a critical review of background research.
- IEMS 602** 3 (3,0) F
Engineering Economic Analysis: PR: ENGR 341. The engineering economic audit, breakeven point analysis, variable budget control of manufacturing costs, cost analysis and product pricing.
- IEMS 603** 3 (3,0) Su
Analysis of Industrial Operations: PR: IEMS 602. Role of engineering economics and operations research in analysis of industrial operations. Includes application of linear programming, queueing, inventory model and decision theory case studies.
- IEMS 610** 3 (3,0) S
Project Engineering: PR: Graduate standing. Role of the project engineer in research and development, emphasizing the sequence of steps from project proposal to project completion. Analytical techniques will be considered.
- IEMS 611** 4 (3,2)
Industrial Fire Protection Engineering II: PR: IEMS 510. Design/test of plant water supply systems. Methods of fire detection/control including design layout of automatic water, gas, powder extinguishment systems. Inspection/maintenance procedures.
- IEMS 620** 3 (3,0) Su
Queueing Systems: PR: IEMS 502. Analysis of queueing systems and waiting line problems using analytical and Monte Carlo methods. Laboratory assignments.
- IEMS 624** 3 (3,0) F
Operations Research I: PR: ENGR 442 or equivalent. Methods of operations research including formulation of models and derivation of solutions by optimization techniques; sequencing and replacement, linear programming, geometric and dynamic programming.
- IEMS 625** 4 (4,0) W
Operations Research II: PR: IEMS 624. Introduction to stochastic models and techniques including queueing theory. Simulation, non-linear programming, calculus of variations, and forecasting.
- IEMS 626** 4 (4,0) F
Linear Programming: PR: ENGR 442 or equivalent. Theoretical and computational aspects of linear programming and related topics. Includes simplex algorithms, duality theory and integer programming. Operational applications and computer solutions are emphasized.

IEMS 627 4 (4,0) W
Non-linear Programming: PR: IEMS 624. Study of non-linear models and their solution. Topics in non-linear programming, separable programming, and geometric programming.

IEMS 628 4 (4,0) S
Dynamic Programming: PR: IEMS 624. A study of the optimization of multistage decision processes based on the application of the principle of optimality. Stochastic and deterministic models are developed.

IEMS 640 4 (4,0) F
Systems Dynamics: PR: COMP 102 or equivalent. Industrial dynamics and the use of computer-based simulation models for the improvement of management control systems. Use of Dynamo II computer simulation language.

IEMS 641 4 (4,0) W
Mathematical Systems Theory III: PR: IEMS 541. Adaptive systems and trainable machines. Introduction to cybernetics and artificial intelligence.

IEMS 662 3 (3,0)
Computer Simulation of Human Behavior: PR: IEMS 432, IEMS 461 or C.I. Consideration of computer simulation techniques to model human performance. Evaluation of such models as stand alone programs or as components in system models.

IEMS 667 3 (3,0)
Man — Computer Interaction: PR: IEMS 461 or C.I. The elements of man-computer interactive systems; hardware and software considerations; requirements of CAI, CAD, and MIS applications; design difficulties found in these systems.

IEMS 671 3 (3,0)
Public Works Economics: PR: ENGR 341 or equivalent. Economic considerations in public works planning. The nature and objective functions of public works projects; cost estimating, cost allocation and pricing. Cost/benefit analysis on primary and secondary benefits from public works projects.

IEMS 672 4 (4,0)
Urban Dynamics: PR: IEMS 540. Development of dynamic and community systems models. Use of computer simulation to analyze governmental and private sector policies in selected areas such as housing programs, industrial growth, worker training programs, environmental quality control, urban planning and land use planning.

IEMS 678 3 (3,0) W
Public Operating Systems Analysis: PR: ENGR 371 or equivalent. Establishment of data base for public operating systems, including identification of data requirements. Development of service demand and workload relationships, resource and manpower requirements.

IEMS 679 3 (3,0) S
Public System Planning and Resource Allocation: PR: IEMS 678. Forecasting work load, demand rates, public services by correlation with census factors in geographical grid network. Application of operations research, computer simulation and analytical models.

ITALIAN

ITA 100 1 (1,0)
Italian Diction: This course is especially designed for music and voice students with an emphasis on musical terms, Italian songs and opera libretti.

ITA 101

4 (4,1) F

Elementary Italian Language and Civilization: Designed to initiate the student to the major language skills: listening, speaking, reading, and writing, in addition to an introduction to Italian culture.

ITA 102

4 (4,1) W

Elementary Italian Language and Civilization: PR: ITA 101 or equivalent. Continuation of ITA 101.

ITA 103

4 (4,1) S

Elementary Italian Language and Civilization: PR: ITA 102 or equivalent. Continuation of ITA 102.



J

JOURNALISM

- JRN 319** 4 (1,3) F,W
Basic Reporting: Development of skills in gathering and writing for the mass media. Student must have minimum ability to type.
- JRN 321** 4 (2,2) W,F
Copy Editing: PR: JRN 319. Fundamentals of copy editing for printed media, including selection, processing and display of news.
- JRN 322** 4 (4,0) S
Advanced Editing: PR: JRN 321 or equivalent. Planning content and format of newspaper and other periodicals; layout; dummyming, departmental editing, copy desk management.
- JRN 323** 4 (4,0)
Press Photography I: Learning the use of the still camera, darkroom procedures, role of the photographer.
- JRN 324** 4 (4,0)
Press Photography II: PR: JRN 323 or equivalent. Further study in the use of the still camera and darkroom procedures plus color photography.
- JRN 330** 4 (4,0) W
History of American Journalism: Development of newspapers and magazines, the press associations and the growth of the electronic media.
- JRN 331** 3 (3,0)
Film Criticism: PR: C.I. The practice of writing movie reviews: students will review at least one film a week during the course.
- JRN 420** 4 (4,0)
Technical and Scientific Writing: PR: C.I. The practice in the gathering of materials for technical and scientific articles; digesting of technical information into more readable forms.
- JRN 421** 4 (4,0)
Editorial and Column Writing: PR: C.I. Building the editorial page, backgrounding and interpreting the news.
- JRN 422** 4 (4,0)
Public Affairs Reporting: PR: JRN 319 or C.I. Study of community news sources, reporting courts, city and county government.
- JRN 423** 4 (4,0)
Writing for the Mass Media: PR: C.I. Students write for a certain segment of the mass media of their own choosing. Will include creative writing, article writing, etc. May be repeated for credit.
- JRN 424** 4 (4,0)
Critical Writing: PR: C.I. Practice in writing reviews of plays, concerts, and books.
- JRN 425** 4 (4,0)
Feature Writing: PR: C.I. Writing of feature articles for newspapers and magazines.
- JRN 426** 4 (4,0)
Political Cartooning I: PR: Evidence of drawing ability. The history and technique of the

political cartoon plus marketing and syndication considerations.

JRN 427 4 (4,0)
Political Cartooning II: PR: JRN 426 or C.I. Further study into the technique of political cartooning.

JRN 430 4 (4,0)
The Newspaper in the Classroom: Study of the use of the newspaper as a teaching aid in the classroom. Designed for persons currently teaching or majoring in education.

JRN 431 4 (4,0)
International Communication and the Foreign Press: A study of the news communicating systems of the world, the role of foreign correspondents, the foreign press.

JRN 433 4 (4,0) W,Su
Propaganda and Psychological Warfare: Propaganda and psychological warfare principles with a study of the activities engaged in by nations.

JRN 440 4 (4,0)
Public Relations: Principles and practice of public relations, the means of gaining publicity and influencing people.

JRN 441 4 (4,0)
Public Relations Campaigns: PR: JRN 440. Planning and execution of a public relations campaign; use of research and coordination of elements of the campaign.

JRN 442 4 (4,0)
Institutional Public Relations: PR: JRN 440 or C.I. Principles and methods of public relations as practiced by educational, medical and corporate-related institutions.

JRN 464 4 (4,0)
Principles of Advertising: Analysis of field of advertising; purposes, techniques, media, organization, and role of research; economic and social aspects of advertising. (Same as MKTG 364).

JRN 465 4 (4,0)
Advertising Media: PR: JRN 464 or C.I. Evaluation of advertising media, their ability to serve the advertiser's communication needs and analysis used in determining media success.

JRN 466 4 (2,2) S
Advertising Copy: PR: JRN 464. The writing and preparation of advertising copy.

JRN 467 4 (4,0) S
Advertising Campaign: PR: JRN 464, JRN 465, JRN 466. The planning and execution of an advertising campaign; use of research and coordination of elements of the campaign

JRN 468 4 (2,2)
Newspaper and Magazine Advertising: PR: C.I. A study of print advertising as it affects the retail advertiser; the mechanical requirements and limitations in print advertising.

L

LEGAL SERVICES — ALLIED

- LES 201** 4
Development of Anglo-American Law: A historical survey of the development of the principles and processes of the American Law from its origins in English common law to the present. (Same as HIST 210).
- LES 202** 4
Law and Justice: An examination of the philosophical origins of various concepts of legal justice with emphasis on the Anglo-American system.
- LES 301** 4
Law and Society: An overview of the law and the legal system and how they relate to our social, political and economic environment.
- LES 302** 4
Legal Investigation: A study of how legal questions are researched to obtain the applicable law. Examination of information collection and investigation procedures involved in legal actions.
- LES 303** 4
Comparative Legal Systems: A comparison of the Anglo-American system of law with those of selected contrasting cultures and nations.
- LES 304** 4
Law and the Paraprofessional: A study of the duties of the legal assistant in a law office. An examination of the ethical standards under which he works.
- LES 305** 4
Litigation and Trial Practice: A study of the more common types of law suits and procedures involved in the preparation, litigation and appeal of cases.
- LES 306** 4
Law Office Administration: A study of the organization, control, and operation of a law office with emphasis placed on the role of the legal administrator.
- LES 315** 4
Administrative Law: Study of the law governing the structure and processes of public service agencies and government departments and bureaus.
- LES 328** 4
Land Use Law I: Study of the law governing land use including planning, zoning, subdivision and building regulations.
- LES 342** 4
Estates and Trusts: A study of the common forms of wills and trusts and the applicable legal principles; of administration of estates; and of the probate court.
- LES 374** 4
Property Law: PR: BADM 371 or C.I. Includes bailments real and personal property, and security interests therein, insurance, suretyship, and guaranty. (Same as BADM 374).
- LES 376** (4)
Criminal Law and the Paraprofessional: A study of the role of the legal assistant in criminal

cases; the procedures involved in preparing for trial; trying the case; and appeals.

LES 378

4

Court Administration: A study of the policies and procedures of modern court administration.

LES 380

4

Real Estate Law: A study of the law of real property; the more common types of real estate transactions and conveyances; and closing procedures and title problems.

LES 428

4

Land Use Law II: Examination of recent statutory changes and judicial interpretations of land use law, especially vis-a-vis planning and environmental protection.

LES 442

4

Domestic Relations Law: A study of the law of domestic relations, to include divorce, child support and adoptions, and an examination of the role of the legal assistant.



M

MANAGEMENT

- MGMT 301** **3 (3,0) F,W,S,Su**
Management and Organization Behavior: Fundamentals of management showing how the manager in any organization effectively performs the functions of planning, organizing, directing, and controlling.
- MGMT 311** **3 (3,0) F,W,S**
Human Behavior and Interpersonal Relations: PR: MGMT 301. Human behavior and its effect upon the operation of formal organizations.
- MGMT 364** **4 (4,0) F,W,S**
Personnel Management: PR: MGMT 301. An investigation of personnel practices and interpersonal relationships involved in managing employees. Internal problems of labor control and the utilization of human resources are considered.
- MGMT 401** **4 (4,0) F,W,S**
Organization Theory: PR: MGMT 301. Elements in organizations and the processes by which they develop and influence behavior are considered.
- MGMT 402** **4 (4,0) Su**
Decision Systems Analysis: PR: COMP 303 or C.I. Decision systems as an instrument to assist in making competent business decisions. Design, installation, and operation of decision systems in a practical business environment.
- MGMT 403** **4 (4,0)**
Managing Decision Systems: PR: MGMT 402. An introduction to the managerial competencies required to assure effective and efficient operation of a decision system after its installation.
- MGMT 424** **4 (4,0)**
Production Management Problems: PR: ENGR 380. Problems in the management of industrial enterprise. Management principles and mathematical analysis applied to manufacturing; product development and production; materials and production control; employee relations.
- MGMT 464** **4 (4,0)**
Personnel Problems: PR: MGMT 364. Case studies in personnel problems directed toward the application of personnel management theory and concepts to organization problems.
- MGMT 465** **4 (4,0) F,W,S**
Industrial Relations: PR: MGMT 364 or C.I. The impact of trade unionism on industrial relations; current problems, conflicts and trends; the development of managerial approaches to achieve labor-management cooperation.
- MGMT 466** **4 (4,0)**
Human Relations in Management: PR: MGMT 301. The individual, interpersonal and group relations and inter-group and organizational problems in business.
- MGMT 501** **4 (4,0)**
Management and Production Concepts: PR: Acceptance into the M.B.A Program. Fundamentals of management and production underlying the solution of problems relating to organization and operation of business enterprises.

MGMT

MKTG

- MGMT 601** 3 (3,0)
Planning and Control Analysis: PR: Graduate standing and MGMT 501 or equivalent. Emphasizes elements of the planning and control processes including objectives, action programs and control procedures. Discusses integration of the two processes.
- MGMT 611** 3 (3,0)
Analysis of Organizational Behavior: PR: Graduate standing and MGMT 501 or equivalent. The analysis of human behavior in organizations in terms of the individual, small group, intergroup relationships, and the total organization.
- MGMT 621** 3 (3,0)
Group Decisions and Analysis: PR: Graduate standing and MGMT 501 or equivalent. Experience in company-wide management decision-making by groups using the management game technique. Analysis of the group decision-making process using video tapes.
- MGMT 650** 3 (3,0)
Evolution of Administrative Management: PR: Graduate standing and MGMT 501 or equivalent. The historical development of management in modern society with emphasis in the management process as applied within the economic, social, political, and legal environment.
- MGMT 656** 3 (3,0)
Research and Development Management: Graduate standing and MGMT 501 or equivalent. An examination of the function of Research and Development and the impact of technological innovation on our economic and social systems.

MARKETING

- MKTG 301** 5 (5,0) F,W,S,Su
Marketing: Study of functions, institutions and basic problems in marketing of goods and services in our economy.
- MKTG 326** 4 (4,0) F,W,S
Consumer Market Behavior: PR: MKTG 301. An analysis of consumer motivation, buying behavior, market adjustment and product innovation. Behavioral aspects of the marketing process from producer to ultimate user or consumer are considered.
- MKTG 334** 4 (4,0)
Marketing Models and Logistics: PR: MKTG 301 and ECON 321. Qualitative and quantitative model building concepts applied to marketing problems with special emphasis on product planning, distribution, promotion strategy, and pricing problems.
- MKTG 364** (4,0)
Principles of Advertising: PR: Junior standing. Analysis of field of advertising; techniques, media, organization, and role of research; economic and social aspects of advertising. (Same as JRN 464).
- MKTG 367** 4 (4,0) F,W,S,Su
Sales Management: PR: MKTG 301. Problems confronting sales manager; training in sales techniques; sales objectives and policies; organization; administration of sales force.
- MKTG 384** 5 (5,0) F,W,S
Marketing Research: PR: MKTG 301 and ECON 321. Study of research procedures and techniques for problem solving in marketing. Concepts are explored and the incorporation of information resources into the management function demonstrated.
- MKTG 469** 4 (4,0)
Channels of Distribution Management: PR: MKTG 301. Marketing activities and relationships within distribution channels. Primary attention given to decision making and

policy formulation for wholesalers, retailers and integrated marketing institutions.

MKTG 485 4 (4,0) F,W,S

Marketing Policies and Strategies: PR: MKTG 384 and C.I. Marketing problems and policies are explored with emphasis placed on the decision-making process.

MKTG 489 4 (4,0)

Current Marketing Problems: PR: Senior standing, marketing major, and C.I. A course emphasizing the recognition and analysis of marketing problems arising from broad cultural, social, political, legal, economic, and competitive developments.

MKTG 501 4 (4,0)

Marketing Concepts: PR: Acceptance into the M.B.A. Program. Study of functions, institutions and basic problems in marketing of goods in our economy.

MKTG 601 3 (3,0)

Marketing Policy: PR: Graduate standing and MKTG 501 or equivalent. Marketing policy formulation and decision-making with respect to planning, pricing, promotion and distribution.

MKTG 602 3 (3,0)

Current Marketing Problems: PR: Graduate standing and MKTG 501 or equivalent. Analysis of marketing problems stemming from broad social, economic, and political developments. Topics treated cover broad classes of marketing institutions.

MKTG 604 3 (3,0)

Sales Management and Control: PR: Graduate standing and MKTG 501 or equivalent. Emphasis is placed on the allocation and development of sales territories and the training, motivation, and supervision of a sales force.

MATHEMATICS

MATH 100 4 (4,0) F,W,S

Principles of Mathematics: PR: Two years of high school mathematics. Selected topics in mathematics with primary emphasis on developing conceptual understanding and broadening insight into mathematics. Not intended for students in the Colleges of Business Administration, Engineering, or Natural Sciences.

MATH 101 4 (4,0) F

Elementary School Mathematics I: PR: Two years of high school mathematics. Logic, sets, the system of whole numbers, numeration systems, the system of integers, the system of rational numbers. Open only to majors in elementary education.

MATH 104 4 (4,0) F,W,S

Fundamental Algebra: Elementary algebra including factoring, plane coordinates, systems of linear equations, exponents and radicals, quadratic equations and inequalities, ratio, proportion, and logarithms. For those students whose preparation in mathematics is non-current or insufficient for MATH 106, 110, 111, and 115.

MATH 106 4 (4,0) F,W,S

College Algebra: PR: MATH 104 or 2 years of high school algebra. Sets; exponential and polynomial functions; formula manipulation; graphs; linear equations; vectors; matrices. Not open to students with credit in MATH 110.

MATH 107 5 (5,0)

College Algebra and Trigonometry: PR: Two years of high school algebra or equivalent. Algebraic expressions, polynomials, graphs, systems of equations, exponents and logarithms;

trigonometric functions, triangle trigonometry, laws of sines and cosines, special formulas and trigonometric identities.

MATH 110 **4 (4,0) F,W,S**

Precalculus Mathematics I: PR: MATH 104 or two years of high school algebra and one year of high school plane geometry. This course is intended to cover most of the topics usually found in college algebra emphasizing the notion of function.

MATH 111 **4 (4,0) F,W,S**

Precalculus Mathematics II: PR: MATH 110 or equivalent (e.g., a course in college algebra which required the mastery of the function concept). Exponential and logarithmic functions; circular and trigonometric functions; inverses of circular functions; complex numbers.

MATH 115 **4 (4,0)**

Finite Mathematics: PR: MATH 104 or one and one half years of high school algebra and one year of plane geometry or two years of high school algebra. Mathematica logic, set theory, counting and the binomial theorem, probability.

MATH 201 **4 (4,0) W**

Elementary School Mathematics II: PR: MATH 101. The system of real numbers, polynomials, linear equations and inequalities, systems of equations and inequalities, quadratic equations and inequalities, the complex numbers. Open only to majors in elementary education.

MATH 211 **3 (3,0) F,W,S**

Analytic Geometry: CR: MATH 111 or equivalent. Topics include coordinate systems; vectors; lines in the plane; lines and planes in space; conic sections; polar coordinates; transformation of coordinates.

MATH 271 **4 (4,0)**

Logic and Proof in Mathematics: PR: Four years of high school mathematics or equivalent. Basic mathematical logic, methods of proof in mathematics, application of proofs to elementary structures. Primarily for mathematical sciences majors.

MATH 301 **4 (4,0) S**

Elementary School Mathematics III: PR: MATH 201 or C.I. Algebraic structures, selected topics from number theory, experimental and formal geometry. Open only to majors in elementary education.

MATH 311 **4 (4,0)**

Applied Calculus I: PR: College algebra and trigonometry. Differential and integral calculus applied to problems in engineering technology fields. Not open to students with credit in MATH 320 or MATH 321.

MATH 312 **4 (4,0)**

Applied Calculus II: PR: MATH 311. Continuation of MATH 311.

MATH 314 **4 (4,0)**

Boolean Algebra: PR: MATH 323 or C.I. Axiomatic development of Boolean algebra; the algebras of sets, logic and circuits as Boolean algebras.

MATH 315 **3 (3,0)**

Introduction to Number Theory I: PR: C.I. Divisibility; primes and composites; divisors; multiples; Euclid's algorithm; Diophantine equations; modulo arithmetic; simple continued fractions.

MATH 316 **3 (3,0)**

Introduction to Number Theory II: PR: MATH 315. Continuation of MATH 315.

MATH 317 **4 (4,0)**

Matrices: PR: MATH 323. Elementary properties of matrices; special, real and complex matrices; determinants and inverses; rank and systems of equations; transformations; eigenvectors; diagonalization; quadratic forms.

MATH 318 **4 (4,0)**

Linear Algebra I: PR: MATH 271. A detailed analysis of finite dimensional linear spaces including bases, subspaces, dual spaces, quadratic forms, and applications to geometry.

MATH 319 **4 (4,0)**

Linear Algebra II: PR: MATH 318. Continuation of MATH 318.

MATH 320 **4 (4,0)**

Concepts of Calculus: PR: MATH 106 or equivalent. Differential and integral calculus of exponential and polynomial functions; optimization of multivariate functions; mathematical models. Not open to students with credit in MATH 321.

MATH 321 **4 (4,0) F,W,S,Su**

Calculus I: PR: MATH 110 and MATH 111 or equivalent. CR: MATH 211. The differential and integral calculus of elementary functions of one variable with attention to a variety of geometric and physical applications.

MATH 322 **4 (4,0) F,W,S,Su**

Calculus II: MATH 321. Continuation of MATH 321.

MATH 323 **4 (4,0) F,W,S,Su**

Calculus III: PR: MATH 322. Continuation of MATH 322.

MATH 324 **4 (4,0) F,W,S,Su**

Intermediate Calculus: PR: MATH 323. Differential and integral calculus of functions of several variables with applications. Topics include vector differential calculus, partial derivatives; multiple integrals; line and surface integrals.

MATH 331 **4 (4,0) F,W,S,Su**

Differential Equations: PR: MATH 323. First order ordinary differential equations; constant coefficients; variation of parameters; step-by-step integration; methods of Picard and Frobenius; input-output analysis; transform methods.

MATH 341 **3 (3,0)**

Vector Analysis: PR: MATH 324. Derivatives and integrals of vector valued functions; the directional derivative and vector operators; the theorems of Green, Gauss, and Stokes; application in engineering and physical sciences.

MATH 351 **4 (4,0)**

Foundations of Geometry: PR: C.I. Modern Euclidean geometry; logical defects in Euclid's geometry; simple axiomatic systems; introduction to finite and affine geometries. Intended for prospective teachers of mathematics.

MATH 411 **4 (4,0)**

Algebraic Structures: PR: MATH 271. An introduction to the properties of groups, rings, polynomial rings, integral domains and fields.

MATH 412 **4 (4,0)**

Algebraic Structures II: PR: MATH 411. Continuation of MATH 411.

MATH 420 **3 (3,0)**

Sequences and Series: PR: C.I. Convergence of infinite sequences and series; double series; infinite products. Intended for prospective teachers of mathematics.

MATH**MATH**

- MATH 421** 3 (3,0)
Introduction to Analysis I: PR: MATH 272 and MATH 324. Limits, sequences and continuity; differentiation and integration; derivatives of integrals; infinite series and convergence; the Bolzano-Weierstrass theorem and the Heine-Borel theorem; extensions in Euclidean n -space.
- MATH 422** 3 (3,0)
Introduction to Analysis II: PR: MATH 421. Continuation of MATH 421.
- MATH 423** 3 (3,0)
Introduction to Analysis III: PR: MATH 422. Continuation of MATH 422.
- MATH 424** 3 (3,0)
Lebesgue Theory: PR: MATH 423. Inner and outer measure; measurable sets and functions; the Lebesgue integral.
- MATH 426** 3 (3,0)
Complex Variables I: PR: MATH 324. Analytic and harmonic functions; mapping by complex functions; Cauchy's theorem and its implications; the maximum modulus principle; series expansions; the residue theorem and its applications.
- MATH 427** 3 (3,0)
Complex Variables II: PR: MATH 426. Analytic continuation; decomposition of meromorphic functions into partial fractions; Mittag-Leffler theorem; entire functions; Weierstrass's Factorization theorem; Riemann Mapping theorem.
- MATH 428** 3 (3,0)
The Number System: PR: C.I. An axiomatic development of the natural numbers followed by a constructive development of the real and complex numbers. Intended for prospective teachers of mathematics.
- MATH 429** 3 (3,0)
Foundations of Calculus: PR: C.I. Functions; limits; continuity; differentiation and integration. Study of the basic structure of the calculus and recommended for prospective teachers of mathematics.
- MATH 431** 4 (4,0)
Ordinary Differential Equations I: PR: MATH 323. First order differential equations; higher order differential equations; applications to mechanical and electrical systems, pursuit curves; Power series solutions and special functions.
- MATH 432** 4 (4,0)
Ordinary Differential Equations II: PR: MATH 431. Sturm-Liouville boundary value problems; systems of first order equations; Volterra's prey-predator equations; nonlinear equations; stability; Poincaré-Bendixon theorem; existence and uniqueness of solutions.
- MATH 434** 3 (3,0)
Partial Differential Equations: PR: MATH 331. Separation of variables; orthogonality and Fourier series; classification of equations; solutions in different coordinate systems; methods of characteristics; the Fourier integral transform and Dirac's delta function.
- MATH 435** 3 (3,0)
Boundary Value Problems: PR: MATH 434. Adjoint forms and Green's functions; applications in engineering and the physical sciences.
- MATH 437** 3 (3,0)
Laplace Transforms: PR: MATH 331. Laplace and Z transforms; solutions of ordinary and partial differential equations; application to circuit analysis and difference equations.

MATH 438 **3 (3,0)**

Transform Calculus: PR: MATH 331. Fourier, Hankel and other transforms with applications to physical problems; the transformations of distributions.

MATH 440 **3 (3,0)**

History of Mathematics: PR: Five hours of mathematics. A chronological study of the evolution of mathematical thought from primitive counting through modern ideas of the twentieth century. Recommended for prospective teachers of mathematics.

MATH 451 **3 (3,0)**

Non-Euclidean and Projective Geometry I: PR: MATH 351 or C.I. Non-Euclidean geometry; projective plane, perspectivities, projectivities; projective theory of conics; analytic projective geometry; vector theory; linear theory; linear transformations in projective geometry.

MATH 452 **3 (3,0)**

Non-Euclidean and Projective Geometry II: PR: MATH 451. Continuation of MATH 451.

MATH 461 **4 (4,0)**

Topology I: PR: MATH 271. Metric spaces; topological spaces, limit points, connectedness; compactness; topology of surfaces; spheres with handles and crosscaps; Euler characteristics; topological invariants.

MATH 462 **4 (4,0)**

Topology II: PR: MATH 461. Continuation of MATH 461.

MATH 511 **4 (4,0)**

Modern Applied Algebra: PR: MATH 324 or equivalent. Modern algebra for computer utilization and design: binary relations, finite state machines, groups, binary group coding, rings and ideals, polynomial codes.

MATH 521 **3 (3,0)**

Advanced Calculus I: PR: MATH 324. Differential and integral calculus of functions of several variables; vector differential calculus. Emphasis on applications.

MATH 525 **4 (4,0)**

Techniques of Complex Variables: PR: MATH 324. Analytic functions; integration in the complex plane; Laurent series and residue calculus, inversion of Laplace transforms; conformal mappings; applications in engineering and the physical sciences.

MATH 526 **3 (3,0)**

Methods of Mathematical Analysis I: PR: MATH 324 or equivalent. Mathematical analysis applied to boundary and eigenvalue problems: calculus of variations, vibrations of stretched strings and membranes, the potential equation, the heat equation, Fourier series.

MATH 535 **3 (3,0)**

Special Functions: PR: MATH 331. Series and integral representations, generating functions; recurrence relations, and orthogonality properties of the special functions. Emphasis on Bessel, Legendre, hypergeometric functions, other special functions.

MATH 621 **3 (3,0)**

Advanced Calculus II: PR: MATH 521. Continuation of MATH 521. Two and three-dimensional theory of vector integral calculus with application; infinite series.

MATH 626 **3 (3,0)**

Methods of Mathematical Analysis II: PR: MATH 526. Topics include self adjoint differential equations, the Sturm-Liouville problem, eigenvalues and eigenfunctions, variational methods, the Rayleigh Ritz method, Schrodinger's Wave equation, Green's functions.

MATH 633**3 (3,0)**

Transform Theory: PR: MATH 525. Laplace, Fourier, Hankel and other integral transforms; inversion theorems; the Z transform; applications to physical problems.

MATH 641**3 (3,0)**

Tensor Analysis: PR: MATH 341 or MATH 621 or equivalent. Contravariant and covariant tensors, metric tensors, geodesics, Christoffel symbols, covariant differentiation, curvature, Ricci tensor, Riemann-Christoffel tensor, and applications of tensors.

MATH 671**3 (3,0)**

Approximation Theory: PR: MATH 423 or MATH 621. Normed linear spaces; Weierstrass approximation theorem; Tchebycheff approximation by polynomials; trigonometric approximation; orthogonal expansions and least squares approximations.

MECHANICAL ENGINEERING AND AEROSPACE SCIENCES

MEAS 341**3 (2,2) F,S**

Kinematics and Kinetics of Machines: PR: ENGR 311. Graphical, mathematical, and computer aided kinematic analysis and synthesis of basic mechanisms. Kinetic analysis of machines.

MEAS 342**4 (4,0) W**

Machine Design and Analysis: PR: MEAS 341. Application of concepts and principles of stress, deflection, strength, and fatigue analysis to machines design. Design Project.

MEAS 351**3 (2,2) F,S**

Measurement Systems: PR: ENGR 312 and ENGR 321. Application of system design concepts to measurements. Fundamental theory of static and dynamic measurements. Behavior of transducers individually and in open-loop systems. Validation of experimental data. Measurements are considered as information transfer accompanied by energy transfer.

MEAS 371**4 (4,0)**

Fluid Mechanics: PR: ENGR 332. Continuation of ENGR 332. Topics in gas dynamics including shock waves, viscous flow analysis and solutions in boundary layer theory.

MEAS 382**4 (4,0)**

Thermodynamics of Mechanical Systems: PR: ENGR 431. Applied thermodynamics, availability analysis, thermodynamics of reactive and non-reactive mixtures, thermodynamic relations of properties. Thermodynamic design analysis of complete mechanical systems.

MEAS 411**4 (3,2)**

Aerodynamics: PR: ENGR 332. Principles of subsonic and supersonic flight; airfoils in compressible and incompressible flow; flow about a body; thin airfoil and finite airfoil theory.

MEAS 415**4 (4,0)**

Space Mechanics: PR: ENGR 311. Dynamics with applications to aeronautical and astronautical problems, orbits and trajectories, motion in a resisting medium, performance and optimization of multistage rockets.

MEAS 423**4 (4,0) W**

Vibration Analysis: PR: ENGR 312. Undamped and damped vibrations of single degree of freedom systems. Forced vibrations, transient response. Many degrees of freedom systems, normal modes, vibration of elastic bodies.

MEAS 424**4 (4,0) W**

Flight Vehicle Structures: PR: ENGR 312. Space structures; thin-walled structures; load

factors; non-symmetrical bending and transverse shear; shear center and shear flow; semimonocoque construction, fuselage rings; multicelled structures; sandwich panels, fatigue.

MEAS 432 **4 (4,0)**

Propulsion Systems: PR: ENGR 431. Analysis of jet propulsion systems including turbojets, ramjets, and rockets.

MEAS 436 **4 (4,0)**

Mechanical Power Systems: PR: ENGR 431. Analysis and design of large power generating systems and components with emphasis on steam plants utilizing both chemical and nuclear fuels.

MEAS 441 **3 (3,0)**

Engineering Design and Analysis: PR: MEAS 341 and Senior standing. Problem formulations and definition, inventiveness enhancement, generalized physical principles, numerical and computer methods and optimization techniques.

MEAS 482 **4 (3,2) F,S**

Heat Transfer: PR: ENGR 431. Steady state and transient conduction in one and two dimensions, convective and radiative heat transfer. Analysis and design of heat exchangers.

MEAS 511 **3 (3,0)**

Aerodynamics: PR: MEAS 411 or equivalent. Advanced aerodynamics principles including fluid dynamics, potential flow theory, airfoil and finite wing theory.

MEAS 523 **4 (4,0)**

Acoustics: PR: C.I. Elements of vibration theory and wave motion; radiation, reflection, absorption, and transmission of acoustic waves; architectural acoustics; control and abatement of environmental noise pollution.

MEAS 537 **3 (3,0)**

Energy Conversion: PR: ENGR 431 and PHYS 344. Unconventional method of energy conversion; particular emphasis on fuel cells, thermoelectrics, thermionics, solar energy, photovoltaics, nuclear, and magnetohydrodynamics.

MEAS 538 **3 (3,0) F**

Environmental Thermodynamics: PR: ENGR 431 or equivalent. Thermodynamics of the environment, computation of energy requirements; physiological reactions to the environment, air and gas distributions, control systems and cleaning of air and the atmosphere.

MEAS 542 **3 (3,0) W**

Principles of Design: PR: MEAS 342 or equivalent. Engineering design algorithm, graphical and computer-aided kinematic synthesis and dynamic analysis. Machine materials and properties, tension torsion, bending, and strength under combined stresses.

MEAS 581 **3 (3,0)**

Statistical Thermodynamics: PR: ENGR 331. Statistical approach to thermodynamic concepts, laws, and methods of analysis. Generalized p-v-T data. Special systems.

MEAS 611 **3 (3,0)**

Aerodynamics: PR: MEAS 411 or equivalent. Theoretical methods useful for predicting performance and stability of thin lifting surfaces and slender vehicles at subsonic, supersonic and hypersonic speeds.

MEAS 613 **3 (3,0)**

Aeromechanics: PR: MEAS 413 or equivalent. Advanced applied aerodynamics including stability and control of aerospace vehicles. Generalized vehicle performance. Small disturbance dynamic stability and control response.

- MEAS 632** 3 (3,0)
Turbomachinery: PR: MEAS 432 or MEAS 436 or equivalent. Application of the principles of fluid mechanics, thermodynamics and aerodynamics to the design and analysis of pumps, compressors, and turbines.
- MEAS 641** 3 (3,0)
System Control: PR: ENGR 421 or equivalent. Theoretical, experimental and computer methods involved in the design of control systems. Emphasis on non-linear systems and advanced methods for control system analysis and optimization.
- MEAS 642** 3 (3,0)
Computer-Aided Design: PR: Graduate standing. Study and engineering application of computer-aided approaches to component and system feasibility study and design considerations computer graphics.
- MEAS 643** 3 (3,0) S
Mechanical Design: PR: MEAS 542. Energy methods in design. Shock, impact, failure theories, thermal stress and pre-stressing for strength. Design using composite, honeycomb, reinforced materials and plastics.
- MEAS 653** 3 (2,2) F
Advanced Engineering Instrumentation: PR: MEAS 351 or equivalent. Theoretical and experimental study of principles of operation, analysis and design techniques for systems of a mechanical and electromechanical nature.
- MEAS 671** 4 (4,0) S
Gas Dynamics: PR: MEAS 371. Survey of gas dynamics. Fundamentals of wave phenomena. Shock waves and the analysis of steady and unsteady subsonic, supersonic and hypersonic flows.
- MEAS 674** 4 (4,0) W
Mechanics of Viscous Flow: PR: EMCS 471 or C.I. Principal concepts and methods for viscous fluid motion. Incompressible and compressible boundary layer analysis for laminar and turbulent flows.
- MEAS 676** 3 (3,0)
Two Phase Flow: PR: C.I. General transport equations for multiphase systems including gas-liquid, gas-solid and liquid-solid systems.
- MEAS 680** 3 (3,0)
Classical Thermodynamics: PR: MEAS 372 or C.I. A general postulative approach to classical macroscopic thermodynamics featuring states as fundamental constructs. Conditions of equilibrium, stability criteria, thermodynamic potentials, Maxwell relations and phase transitions.
- MEAS 682** 3 (3,0)
Combustion Phenomena: PR: MEAS 482. Physical and chemical aspects of combustion phenomena. Rate processes, chemical kinetics, structure, propagation, aerodynamics and stability of premixed and diffusion flames.
- MEAS 685** 3 (3,0) F
Conduction Heat Transfer: PR: EMCS 574. Application of principles of heat transfer to the solution of steady and transient conduction heat transfer problems. Classical and numerical solutions will be considered.
- MEAS 686** 4 (4,0) W
Convection Heat Transfer: PR: MEAS 674 or C.I. Convection heat, mass and momentum transfer in laminar and turbulent flows. Emphasis on analysis and evaluation of heat transfer

coefficients, heat exchanger theory and design.

MEAS 688**3 (3,0)**

Radiation Heat Transfer: PR: MEAS 482 or C.I. Radiation properties and analysis of radiation heat transfer problems. Experimental techniques. Applications to space and solar energy utilization.

MEDICAL RECORD ADMINISTRATION**MRA 300****3 (2,2) F**

Medical Record Administration: An introduction to the field of medical record administration.

MRA 301**5 (3,4) W**

Evaluation of Patient Care: PR: MRA 300 or C.I. Problem oriented medical record; accreditation, certification; health statistics; release of information; medical staff committees; prospective, concurrent and retrospective evaluation techniques.

MRA 302**4 (3,2) S**

Coding and Indexing Procedures: PR: AHS 305. Special registries; nomenclatures; coding and indexing; application of indices to research.

MRA 370**1 (0,4) W**

Directed Experience I: PR: AHS 305 and MRA 300. Transcription and interdepartmental experience in selected health care facilities.

MRA 371**1 (0,4) S**

Directed Experience II: PR: MRA 370. Application in a health record facility of the principles of filing; quantitative, qualitative record analysis; correspondence; microfilming; coding and indexing procedures.

MRA 403**5 (3,4) F**

Health Care Records: PR: MRA 301 or C.I. Medical record standards and procedures for long term, ambulatory, home care, and other health care institutions. Field trips.

MRA 421**3 (2,2) S**

Analysis of Medical Record Department Operations: PR: AHS 420. Forms analysis and control; work distribution and simplification; other evaluation techniques.

MRA 472**2 (0,8) F**

Directed Experience III: PR: MRA 371. Supervised management experience in the medical record department of an approved health care facility.

MRA 473**1 (0,4) W**

Directed Experience IV: PR: MRA 472. Continuation of MRA 472.

MRA 474**4 (0,16) S**

Management Affiliation: Four weeks of affiliation at a selected health care facility serving in an administrative capacity under the direction of a Registered Record Administrator.

MEDICAL TECHNOLOGY**MEDT 440****9 F,W,S**

Clinical Bacteriology: PR: Admission to Medical Technology Internship or C.I. Isolation and identification of pathogenic bacteria by culture and serological methods.

MEDT 442**10 F,W,S**

Clinical Chemistry: PR: Admission to Medical Technology Internship or C.I. Instruction and laboratory practice in clinical chemistry.

MEDT**MICR**

MEDT 443 5 F,W,S
Clinical Blood Banking: PR: Admission to Medical Technology Internship or C.I. Instruction and laboratory practice in clinical blood banking.

MEDT 444 10 F,W,S
Clinical Hematology: PR: Admission to Medical Technology Internship or C.I. Instruction and laboratory practice in clinical hematology.

MEDT 445 1 F,W,S
Clinical Mycology: PR: Admission to Medical Technology Internship or C.I. Instruction and laboratory practice in the isolation and identification of fungi associated with mycotic infections of man.

MEDT 446 3 F,W,S
Clinical Parasitology: PR: Admission to Medical Technology Internship or C.I. Instruction and laboratory practice in the examination and study of clinical material for the detection and identification of animal parasites.

MEDT 447 3 F,W,S
Clinical Serology: PR: Admission to Medical Technology Internship or C.I. Instruction and laboratory practice in serological methods used in diagnosis and study of disease.

MEDT 448 3 F,W,S
Clinical Urinalysis: PR: Admission to Medical Technology Internship or C.I. Instruction and laboratory practice in urinalysis.

MEDT 449 2 F,W,S
Clinical Coagulation: PR: Admission to Medical Technology Internship or C.I. Instruction and laboratory practice in coagulation. Theory and techniques.

MICROBIOLOGY

MICR 200 4 (3,4) F,S
General Microbiology: PR: A college course in chemistry and 8 hours of biological science. Fundamentals of microbiology, microbial morphology, metabolism and laboratory techniques.

MICR 210 3 (1,4) F,W,S,Su
Culture Media and Reagents: PR: MICR 200. Preparation of differential, selective and enrichment media; reagents used in microbiology; instrumentation used in culture media preparation.

MICR 300 5 (3,6) F,W
Biology of Microorganisms: PR: MICR 200; CR: CHEM 321 or CHEM 113. Concepts and experimental methods in microbiology.

MICR 320 4 (3,4) F,S
Pathogenic Microbiology: PR: MICR 300 or C.I. Microorganisms producing disease in man and other animals; means of transmission; protection against disease.

MICR 381 3 (2,2) W
Immunology: PR: One year of biological sciences. Basic principles of the immune reaction; antigens, antibody formation, hypersensitivity and autoimmunity.

MICR 382 3 (1,6) S
Serology: PR: MICR 381. Laboratory exercises in the production of antibodies, agglutination and precipitin reactions; quantitative techniques and isohemoagglutination.

MICR 410 5 (2,6)
Diagnostic Microbiology: PR: MICR 320. Techniques used in identifying bacteria which are

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pathogenic to man.

MICR 422 4 (3,4) F

Microbiology of Water and Waste: PR: MICR 300 or C.I. Organisms in water and their relationship to production and distribution of potable water; disposal of sewage.

MICR 430 4 (3,4)

Microbial Physiology: PR: MICR 300 and CHEM 442. Relationship between structure and function in microorganisms.

MICR 440 4 (3,4)

Determinative Microbiology: PR: MICR 300. Microbial classification, rules of nomenclature, bacterial code and identification of species.

MICR 451 4 (3,4)

Microbial Ecology: PR: BIOL 350 and MICR 300. Study of the roles of microbes in the environment.

MICR 470 4 (3,4)

Biology of Viruses: MICR 300 and CHEM 442. Nature of viruses and Rickettsiae, including their structure, propagation, isolation and identification.

MICR 485 4 (3,3)

Medical Mycology: PR: MICR 300 or C.I. Etiology, mycology and clinical aspects of fungal induced human diseases.

MICR 524 3 (3,0)

Infectious Process: PR: MICR 300 or C.I. Discussion of current theories of the infectious process and the response of cells and tissue to infection.

MICR 540 4 (3,4)

Classification of Microorganisms: PR: MICR 300. Microbial classification, rules of nomenclature, bacterial code, identification of species. Special project required.

MICR 570 4 (3,4)

Virology: MICR 300 and CHEM 442. Nature of viruses and Rickettsiae, including their structure, propagation, isolation and identification. Special project is required.

MICR 581 4 (2,4)

Applied Microbiology: PR: MICR 300 or C.I. Microbiology of consumer products; role of microorganisms in world food production and deterioration of consumer products; quality control.

MICR 633 4 (4,0)

Microbial Metabolism: PR: C.I. Relationship between microbial metabolism and principal cellular activities, emphasizing transport, respiration, differentiation, and syntheses.

MUSIC

MUS 100 0 (3,0) F,W,S,Su

Music Forum: A series of special musical events required of music majors. Includes lectures and recitals by faculty, students, and guest artists.

MUS 104 1 (1,1) F,W,S,Su

Secondary Performance: Private and/or class instruction. Credit applicable toward music degree if not in student's principal performing medium; open to non-music majors. May be repeated for credit.

- MUS 105** 1 (0,2) F,W,S,Su
Class Piano I: Class instruction for beginning piano students. Not open to music majors whose major performing medium is piano. May be repeated for credit.
- MUS 106** 1 (0,2) F,W,S,Su
Class Piano II: PR: MUS 105 or C.I. Not open to music majors whose major performing medium is piano. May be repeated for credit.
- MUS 107** 1 (0,2) F,W,S,Su
Class Piano III: PR: MUS 106 or C.I. Preparation for the piano proficiency examination. May be repeated for credit.
- MUS 108** 1 (1,1) F,W,S,Su
Class Piano IV: PR: MUS 107 or C.I. Individualized instruction. Credit applicable toward music degree by non-piano majors; open to non-music majors. May be repeated for credit.
- MUS 201** 4 (2,4) F
Musicianship: PR: MUS 103 or Satisfactory placement test. Required of music majors; writing, performance, analysis of music; emphasis on present-day experimental music and twentieth century music.
- MUS 202** 4 (2,4) W
Musicianship: PR: MUS 201. Continuation of MUS 201.
- MUS 203** 4 (2,4) S
Musicianship: PR: MUS 202. Continuation of MUS 202.
- MUS 204** 4 (1,7) F,W,S,Su
Principal Performance I: PR: Faculty jury. Required of music majors; private and class lessons plus assigned major performing organization and chamber music ensemble. May be repeated for credit.
- MUS 205** 4 (4,0) F,W
Music Fundamentals: Introduction to basic musical elements, development of the student's skills in writing, performance, and analysis. Credit not applicable toward music degree.
- MUS 301** 4 (2,4) F
Musicianship: PR: MUS 203. Required of music majors; continuation of MUS 201-203; writing, performance, analysis of music of seventeenth-nineteenth centuries as related to present-day music.
- MUS 302** 4 (2,4) W
Musicianship: PR: MUS 301. Continuation of MUS 301.
- MUS 303** 4 (2,4) S
Musicianship: PR: MUS 302. Continuation of MUS 302.
- MUS 304** 4 (1,7) F,W,S,Su
Principal Performance II: PR: Necessary competence at MUS 204 level determined by faculty jury. Required of music majors. May be repeated for credit.
- MUS 305** 1 (0,4) F,W,S,Su
Major Performing Organizations: PR: C.I. Open to all students. Study and performance of music for large ensembles. May be repeated or credit; credit not applicable toward music degree.
- MUS 306** 1 (0,3) F,W,S,Su
Chamber Music Ensembles: PR: C.I. Open to all students. Study and performance of music for small ensembles. May be repeated for credit; credit not applicable toward music degree.

MUS 310 3 (2,1) F,W,S,Su
Recorder I: Open to all non-music students. Class instruction in beginning recorder playing.

MUS 311 2 (1,1) F,W,S,Su
Recorder II: Class instruction in advanced recorder solo and ensemble playing. PR: Open to music students; and non-music students who have taken MUS 310.01 and C.I.

MUS 312 3 (0,3) F,W,S,Su
Music in Society: Social functions of music and its relationships with other arts. No pre-requisite.

MUS 320 4 (3,1) F,W,S,Su
Enjoyment of Music: PR: Open only to non-music majors. Instruction designed to develop an understanding of basic musical principles and improved techniques for listening to music.

MUS 401 4 (2,3) F
Musicianship: PR: MUS 303. Required of music majors; continuation of MUS 301-303; writing, performance, analysis of Western European music to 1600 as related to present-day music.

MUS 402 4 (2,3)
Musicianship: PR: MUS 401. Continuation of MUS 401.

MUS 403 4 (2,3)
Musicianship: PR: MUS 402. Continuation of MUS 402.

MUS 404 4 (1,7) F,W,S,Su
Principal Performance III: PR: Satisfactory piano proficiency examination and necessary competence at MUS 304 level determined by faculty jury. Required of music majors. May be repeated for credit.

MUS 474 1,6 (0,3-13) F,W,S,Su
Directed Experience: PR: C.I. Required of music majors; experience in communicating music under qualified teachers. Credit determined by number of hours assigned per week. May be repeated.

MUS 484 4 (1-7) F,W,S,Su
Principal Performance IV: PR: Necessary competence at MUS 404 level determined by faculty jury. Required of music majors. May be repeated for credit.

MUS 501 3
Graduate Musicianship: PR: C.I. The study of music from various style periods; writing, performance, and analysis of music; may be repeated for credit.

MUS 504 2-4
Graduate Performance: PR: C.I. Amount of credit determined by audition. May include both principal and secondary performance areas. May be repeated for credit.



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PHILOSOPHY

- PHI 105** 4 (4,0) W
Critical Thinking: An examination of fallacies and other logical abuses in conjunction with an analysis of traditional modes in an attempt to encourage meaningful thought and usage.
- PHI 205** 4 (4,0) F,W,S,Su
Formal Logic I: Analysis of logical form and of procedures used in deductive inference, of the kind underlying mathematical reasoning.
- PHI 221** 4 (4,0) F,W,S
Introduction to Philosophy: Inquiry into the meaning and justification of fundamental ideas and beliefs concerning reality, knowledge, and value; introduction to relevant topics in ethics, religion, and politics.
- PHI 301** 4 (4,0) F
Ancient Philosophy: Foundations of Western philosophy in ancient Greek thinking about man and nature, including the pre-Socratics, Socrates, Plato, Aristotle.
- PHI 302** 4 (4,0) W
Medieval and Early Modern Philosophy: Faith, reason and skepticism in the development of philosophy from the Scholastics to Hume; Continental Rationalism and British Empiricism.
- PHI 303** 4 (4,0) S
Late Modern Philosophy: Relativism and atheism in the development of philosophy from Kant to Nietzsche; the challenge of science and religion to philosophy.
- PHI 305** 4 (4,0) S
Formal Logic II: PR: PHI 205. Systematic study of propositional and first-order predicate logic; logistic systems and axiomatic methods; problems of metatheory, including consistency, completeness and decidability.
- PHI 312** 4 (4,0) F
Existentialism: Study of existentialist analysis and criticism of the human situation as found in the writings of such philosophers as Kierkegaard, Nietzsche, Heidegger, Sartre, and Camus.
- PHI 314** 4 (4,0) W
Problems in Contemporary Philosophy: Prominent issues and trends in 20th-century philosophy, excluding Existentialism.
- PHI 331** 4 (4,0) F,S
Ethics: An examination of the nature of moral problems, judgments and principles with an emphasis on recent formulations in ethical theory.
- PHI 341** 4 (4,0) W
Aesthetics: An investigation into the nature of human artistic experience with special reference to the problems of creativity.
- PHI 401** 4 (4,0)
Social Philosophy: Philosophically analyzes and evaluates selected issues arising from interaction of the individual, society, and the state.
- PHI 405** 4 (4,0) W
Philosophy of Religion: An examination of basic ideas, beliefs, attitudes and functions of religion; the significance of religion in human experience.

PHI 409 4 (4,0) S
Philosophy of Science: An examination of the conceptual foundations and methodology of modern science.

PHI 461 4 (4,0)
The Secular View: Examination of the philosophical foundations of secularism and of literary and political humanism, based on the work of Erasmus, Montaigne, Voltaire, Hobbes, Locke, and Rousseau.

PHYSICS

PHYS 100 4 (4,0) F,S
Physical Science: Familiarization with the basic laws governing our universe and man's physical environment. Satisfies science requirements of the Environmental Studies Program.

PHYS 103 4 (4,0) F,S
Astronomy I: Descriptive survey of solar system, galaxies and universe. Physical properties of stars deduced from their radiation. Night observation sessions. Appropriate for the Environmental Studies Program.

PHYS 201 4 (3,3) F,W
College Physics I: PR: Two years of high school mathematics. Lectures and laboratory experiments, with special application to life sciences: mechanics, thermodynamics, electricity, magnetism, optics, sound, quantum and nuclear physics.

PHYS 202 4 (3,3) W,S
College Physics II: PR: PHYS 201 or C.I. Continuation of College Physics sequence.

PHYS 211 4 (4,0) F
General Physics I: CR: MATH 321. The first course in a sequence covering the basic principles of classical mechanics, thermodynamics, electricity, magnetism, optics and modern physics.

PHYS 212 4 (4,0) W
General Physics II: PR: PHYS 211; CR: MATH 322. Continuation of the General Physics sequence.

PHYS 213 4 (4,0) S
General Physics III: PR: PHYS 212; CR: MATH 323. Continuation of the General Physics sequence.

PHYS 282 1 (0,3) W
General Physics Laboratory I: PR: PHYS 211. Laboratory experimentation and instruction covering selected topics in physics.

PHYS 283 1 (0,3) S
General Physics Laboratory II: PR: PHYS 282 or C.I. Continuation of physics laboratory instruction.

PHYS 301 3 (1,3) F
Project Physics I: "Hands-on" lecture-laboratory course, particularly for Elementary Education majors and prospective Junior High science teachers. Topics range from naked-eye astronomy to radioactive dating.

PHYS 302 3 (1,3) W
Project Physics II: PR: PHYS 301 or C.I. Continuation of Project Physics sequence.

PHYS 303 3 (1,3) S
Project Physics III: PR: PHYS 302 or C.I. Continuation of Project Physics sequence.

PHYS 304

4 (4,0)

Astronomy II: PR: PHYS 103 or equivalent. A continuation of PHYS 103 with emphasis on stellar and galactic evolution and recent discoveries in astronomy. Appropriate for the Environmental Studies Program.

PHYS 307

3 (3,0)

Biophysics: PR: College physics or C.I. Physics of Biosystems, viewed as optimal control systems with constraints imposed by energy transfer mechanisms, and examined by considering energy, information, and cybernetics.

PHYS 311

4 (4,0) F

Intermediate Physics I: PR: PHYS 213 or C.I.; CR: MATH 324. First course in a sequence covering mechanics, vectors, coordinate transformations, rigid-body dynamics, electrostatics, electrodynamics, Maxwell's equations, special relativity, radiation, atomic, nuclear, and solid state physics, wave guides, physical optics, wavemotion, quantum statistics in thermodynamics, and kinetic theory.

PHYS 312

4 (4,0) W

Intermediate Physics II: PR: PHYS 311 or C.I.; CR: MATH 331. Continuation of the Intermediate Physics sequence.

PHYS 313

4 (4,0) S

Intermediate Physics III: PR: PHYS 312 or C.I.; CR: MATH 331. Continuation of the Intermediate Physics sequence.

PHYS 314

4 (4,0) F

Intermediate Physics IV: PR: PHYS 313 or C.I. Continuation of the Intermediate Physics sequence.

PHYS 315

4 (4,0) W

Intermediate Physics V: PR: PHYS 314 or C.I. Continuation of the Intermediate Physics sequence.

PHYS 335

3 (3,0) W

Electronics: PR: PHYS 212; CR: MATH 331, or C.I. Basic DC and AC circuit analysis. Theory of semiconductors and transistors, rectification, amplification, oscillation. Small signal analysis, and circuit design.

PHYS 343

4 (3,2) S

Computer Methods in Physics I: PR: PHYS 211 and COMP 102 or C.I. Non-analytical problems in physics and astronomy, supplementary to the Physics 211, 212, 213 sequence, solved by approximation methods with computer assistance.

PHYS 344

3 (3,0) W,Su

Modern Physics for Engineers: PR: PHYS 354. Selected topics in atomic, nuclear, molecular, and solid state physics. A study of spectroscopy, X-rays, nuclear radiation and cosmic rays.

PHYS 345

3 (3,1)

Astrophysics: PR: PHYS 213 or equivalent. Theories of evolution of stars and planets, models of stellar interiors, properties of stellar atmospheres and spectra. Night sessions for photography.

PHYS 354

3 (3,0) F,S

Optics and Wave Motion for Engineers: PR: ENGR 221 and MATH 331. Selected topics in optics, acoustics, and related wave phenomena. A study of reflection, refraction, interference, and diffraction.

- PHYS 380** 4 (3,3) F,S,Su
Physics of Scientific Instruments: PR: PHYS 202 or C.I. A lecture-laboratory course in fundamentals of physics related particularly to the application, operation and limitations of various scientific instruments.
- PHYS 381** 4 (2,4) F
Physics Laboratory — Electronics: PR: PHYS 335 or C.I. Lecture and laboratory work stressing electronic principles through the study of test equipment, power supplies, amplifiers, oscillators, and pulse circuits.
- PHYS 382** 4 (0,6) W
Intermediate Physics Laboratory I: PR: PHYS 213 or C.I. Laboratory work in basic measurements of physical constants; intermediate level experiments in electronics, modern physics, nuclear physics, optics and solid state physics.
- PHYS 383** 4 (0,6) S
Intermediate Physics Laboratory II: PR: PHYS 382 or C.I. Continuation of physics laboratory instruction.
- PHYS 443** 3 (2,2)
Computer Methods in Physics II: PR: PHYS 311 and COMP 102 or C.I. Examples and problems in physics from classical mechanics, electromagnetic theory and wave mechanics are solved using numerical techniques with computer assistance.
- PHYS 451** 3 (3,0)
Optics: PR: MATH 331 and PHYS 312 or PHYS 354 or C.I. A study of modern approaches to refraction, interference, diffraction, polarization, scattering, absorption and stimulated emission, spectroscopy and lasers.
- PHYS 461** 3 (3,0)
Solid State Physics: PR: PHYS 314 or C.I. Properties of solids, crystal binding, free electron model, band theory of solids, Fermi surface, and solid state applications.
- PHYS 471** 3 (3,0)
Quantum Mechanics: PR: PHYS 314 or C.I. A study of the postulates of quantum mechanics, the Schrodinger equation, and an introduction to the statistics of many particle systems.
- PHYS 477** 3 (3,0)
Nuclear Physics: PR: PHYS 314 and MATH 331 or C.I. Nuclear force, structure, moments, and models. Alpha decay, beta decay, gamma-ray emission, nuclear reactions and applications of nuclear physics.
- PHYS 481** 4 (0,6)
Advanced Physics Laboratory: PR: PHYS 382 or C.I. Experiments in optics, electronics; atomic, molecular, nuclear, solid state physics; emphasis on design, data and scientific writing.

POLITICAL SCIENCE

- PCL 201** 4 (4,0) F,W,S,Su
American National Government: A study of the dynamics of American national government, including its structure, organization, powers, and procedures.
- PCL 300** 4 (4,0) W
State Government: PR: PCL 201, PCL 303 or C.I. A comparative study of American state governments and political processes with emphasis on Florida.

- PCL 302** 4 (4,0) F,W,S,Su
Scope and Methods of Political Science: Introduction to the Scope and Methodology of contemporary political analysis. Topics include scope of the discipline, research design, and methods.
- PCL 303** 4 (4,0) F,W,S,Su
Principles of Political Science: Basic concepts of political science and its development as a field with emphasis on areas of concern; analysis of major approaches to the study of politics.
- PCL 305** 4 (4,0) W,F
Political Parties and Processes: PR: PCL 201 or C.I. Study of American politics with major emphasis upon the role, organization, functions, and processes of parties in the American political system.
- PCL 306** 4 (4,0) W
Interest Groups and Political Movements: PR: PCL 201 or C.I. A study of the role of interest groups in the American political process and a comparison of varying political objectives and strategies used by the groups.
- PCL 308** 4 (4,0) F
The American Presidency: PR: PCL 201 and PCL 303 or C.I. Examination of the presidency as an institution and of the evolution in status, powers, administrative responsibilities, leadership and decision-making roles.
- PCL 310** 4 (4,0) W
Congress and the Legislative Process: PR: PCL 201 and PCL 303 or C.I. The nature, role, and functions of the legislative process; the dynamics of executive-legislative relations and resultant problems.
- PCL 312** 4 (4,0) Su
Minorities in American Politics: PR: PCL 201 and PCL 303 or C.I. The past and contemporary roles of minority groups in the American political system; their impact upon the legislative, executive, and judicial processes.
- PCL 315** 4 (4,0) F
Public Opinion: A substantive and theoretical study of public opinion; patterns of distribution, opinion formation, opinion measurement, policy linkages.
- PCL 316** 4 (4,0) W
Electoral Behavior: Theoretical and substantive inquiry into U.S. electoral behavior: a study of the factors influencing participation and voting behavior.
- PCL 321** 4 (4,0) F,S
International Relations: PR: PCL 201 and PCL 303 or C.I. Analysis of the fundamental principles and factors affecting interstate relations; the foreign policy decision-making processes of states.
- PCL 322** 4 (4,0)
World Political Geography: Analysis of the types and distributions of political systems, review of factors which affect relative power of diverse politics, areas of conflict and arbitration. (Same as GEOG 360).
- PCL 323** 4 (4,0) W,Su
Contemporary International Politics: PR: PCL 201 and PCL 303 or C.I. Application of the theory and fundamentals of international politics to contemporary world affairs with attention to the impact of current developments upon the international system.

PCL 341 4 (4,0) F,W,S,Su
Comparative European Politics: PR: PCL 201 and PCL 303 or C.I. An analytical and comparative study of the major governments of Europe and their impact upon the development of types of political systems.

PCL 342 4 (4,0) F
Nationalism: A Systematic Analysis: Theories of modern nationalism as a world-wide political phenomenon including problems of: nationalistic wars and rebellions, multi-nation states, trans-national organizations.

PCL 343 4 (4,0)
Politics of Developing Areas: PR: PCL 201 and PCL 303 or C.I. An analysis of non-Western political systems with emphasis upon the problems of political, socio-economic, and cultural development.

PCL 344 4 (4,0)
Comparative Asian Politics: PR: PCL 201 and PCL 303 or C.I. Selected Asian political systems will be examined in terms of the interaction between political institutions and processes and social, cultural and economic structures.

PCL 347 4 (4,0) F,W
Contemporary Revolution and Political Violence: Theory and analysis of Political violence and fundamental change of political systems. Analysis of revolutions, counterrevolutions and conditions of political turmoil in the contemporary world.

PCL 348 4 (4,0) F,W
Politics of Mexico, Central America and the Caribbean: Survey of politics and governments of the area. Influence of cultural, social and economic factors in each country's political development are considered.

PCL 349 4 (4,0)
Southern Politics: Study of Southern politics past and present. Emphasis on patterns of change and recent developments affecting the south and the nation.

PCL 405 4 (4,0) F
Political Theory: PR: PCL 201 and PCL 303 or C.I. Examination of various normative and empirical approaches to the study of political science, stressing contemporary developments in the field.

PCL 406 4 (4,0)
Contemporary Democratic Theory: Study of democratic theories emphasizing elitist theories, participatory democracy, citizen participation and the relevance of empirical research to democratic theory.

PCL 413 4 (4,0) S
Metropolitan Politics: PR: PCL 201 and PCL 303 or C.I. Analysis of political patterns, processes and issues in American communities.

PCL 417 4 (4,0) W
Policy Problems of Metropolitan Areas: PR: 4 hours of political science or C.I. A course designed to provide an in-depth analysis of two or three basic policy areas; for example, transportation, education, welfare, crime, etc.

PCL 418 4 (4,0) F
The Politics of Planning for Urban Communities: PR: PCL 413 or C.I. An examination of social, political, and economic factors influencing the urban planning process at local, state, and national levels.

- PCL 420** 4 (4,0) F
Contemporary International Politics of Asia: Examination of the role of Asia in international politics and the foreign policies of major and secondary powers as they relate to trends in Asia.
- PCL 421** 4 (4,0) F
International Politics of the Middle East: The external politics of the Middle East from a regional-global perspective with particular attention to the region's impact upon the relations of major powers.
- PCL 422** 4 (4,0)
Inter-American Politics and Organizations: Examination of relations among American Republics. Special attention given the roles of the United States, the Organization of American States, and trade and aid arrangements.
- PCL 424** 4 (4,0)
Political Sociology: Sociological analysis of political and para-political groups; socio-economic variables of voting behavior; power elites; societies and systems of government. (Same as SOC 420).
- PCL 425** 4 (4,0) S
Political Party Behavior: In depth analysis of selected topics in political party behavior including: changes in Southern politics; urban parties in transition; political campaigns; the changing electorate.
- PCL 427** 4 (4,0)
American Foreign Policy: PR: PCL 201 and PCL 303 or C.I. Analysis of the traditions and development of American foreign policy with emphasis on the role and policies of the United States in the contemporary world.
- PCL 428** 4 (4,0) W
American Defense Policy: Study of policy evolution since World War II including consideration of the social and political costs involved and means of control.
- PCL 430** 4 (4,0) S
International Organizations: PR: PCL 201 and PCL 303 or C.I. The nature and growth of international agencies of cooperation. Attention focused on the problems and development of functional, regional, and universal organizations.
- PCL 432** 4 (4,0) S,Su
International Law I: PR: PCL 201 and PCL 303 or C.I. An introduction to the nature, evolution and sources of international law and its role in interstate relations.
- PCL 433** 4 (4,0)
International Law II: PR: PCL 432 or C.I. Examination of various subareas of International Law including maritime law, laws of the sea and seabed, air law, and the legal status of outer space.
- PCL 435** 4 (4,0) W
Coercion in International Politics: PR: PCL 201 and PCL 303 or C.I. An examination of the role of coercive techniques among states in a nuclear age including theories of nuclear strategy and deterrence.
- PCL 440** 4 (4,0)
Public Administration Models: PR: PCL 350 or C.I. The study of multiple administrative models and organizational techniques employed by various public administration communities in the United States.

- PCL 442** 4 (4,0) S
Government and Politics of Great Britain: PR: PCL 341 or C.I. A survey of British government, society, and institutions, with emphasis on the growth and development of parliamentary democracy.
- PCL 443** 4 (4,0) W
Government and Politics of the Soviet Union: PR: PCL 341 or C.I. Examination of the origins, institutions, and functioning of the Soviet political system, including the role and characteristics of the communist party of the Soviet Union.
- PCL 444** 4 (4,0) Su
Government and Politics of China: Examination of the origins, institutions, and functioning of the Chinese political system, including the role and characteristics of the communist party of China.
- PCL 447** 4 (4,0)
Political Socialization: PR: PCL 201 and PCL 303 or C.I. Analysis of the quality and function of the recruitment and socialization processes. Identification of the agents and processes of political socialization.
- PCL 450** 4 (4,0) S
American Public Policy: PR: PCL 201 and PCL 303 or C.I. The American policy-making process with a focus upon contemporary problems including the malapportionment of societal power and social conflict.
- PCL 461** 4 (4,0) F
Political Philosophy I: PR: PCL 201 and PCL 303 or C.I. Study of the development of political and social ideas in Western thought from early Greece to the Renaissance.
- PCL 462** 4 (4,0) W
Political Philosophy II: PR: PCL 201 and PCL 303 or C.I. Renaissance to the 19th Century.
- PCL 463** 4 (4,0) S
Political Philosophy III: PR: PCL 201 and PCL 303 or C.I. Study of contemporary Western political and social thought in the 19th and 20th Centuries.
- PCL 471** 4 (4,0) F
American Constitutional Law: PR: PCL 201 and PCL 303 or C.I. The impact of judicial decision-making upon the growth of American political institutions and processes.
- PCL 473** 4 (4,0) W,Su
American Constitutional Law: PR: PCL 201 and PCL 303 or C.I. The role of the judiciary in the focusing and refinement of individual rights and civil liberties in American society.
- PCL 475** 4 (4,0) F
Judicial Behavior: Study of Judicial Behavior emphasizing the role of courts as a bureaucratic structure. Consideration will be given to comparative judicial systems.
- PCL 480** 4-15 (0, 4-15) F,W,S,Su
Political Science Internship: PR: C.I. Internship working with National, State, County or Municipal governments. Assignments with selected civic organizations, elected or appointed official.
- PCL 550** 4 (4,0)
Contemporary American Problems: PR: PCL 201, 303, 450 or C.I. Senior or graduate standing. A public policy analysis of current problems encountered within the American political system and an examination of policy alternatives.

- PCL 600** 4 (4,0)
Public Policy and Political Analysis: PR: C.I. An analysis of governmental action and models useful in policy analysis, stressing the pressures and procedures in decision making in a dynamic federal system.
- PCL 601** 4 (4,0)
Public Policy and Political Research: PR: C.I. Approaches to problem solving in policy and political research, emphasizing the formulation of research strategies, sources of data, and data analysis.
- PCL 603** 4 (4,0)
Statistical Models for Policy Analysis: PR: PCL 601 and C.I. Applications and analysis of problems in the use of statistical data. Emphasis on methods of data collection and analysis.
- PCL 605** 4 (4,0)
Bureaucracy and Public Policy: PR: C.I. A critical examination of the bureaucracy and the development and impact of bureaucratic behavior and structure upon public administration.
- PCL 611** 4 (4,0)
Planning and Organization for Economic and Social Development: PR: C.I. The purpose and use of economic and social planning, examining theories of development, regional analysis, methods and administration of planning, and evaluation of plan performance.
- PCL 612** 4 (4,0)
Choice Theory: PR: C.I. Analysis of rational choice theories, game theoretic models, incremental decision making, with applications to problems of strategy and politics.
- PCL 614** 4 (4,0)
The Environment of Policy Making: PR: C.I. Consideration of the impact of the intra-systematic and extra-systematic environment upon the decision making process.
- PCL 620** 4 (4,0)
Public Opinion and Policy Formation: PR: C.I. A substantive and theoretical approach to understanding relationships between public opinion and public policy, including opinion/policy linkage models as well as opinion measurement.
- PCL 630** 4 (4,0)
Policy Analysis and Administration: PR: C.I. Program analysis and organization structure as policy tools, examining the implementation of differential policy and the administrator as policy maker and change agent.
- PCL 633** 4 (4,0)
Budgeting as a Policy and Program Instrument: PR: C.I. Budgets as planning/programming documents, stressing the relationships of policy and budgetary decisions, problems in grantsmanship and revenue decision making, program budgeting, PPBS, and incrementalism.
- PCL 636** 4 (4,0)
Labor-Management Relations in the Public Sector: PR: C.I. A broad perspective of management-employee relations in the public sector including grievance procedures, fact finding, collective bargaining, mediation and arbitration.
- PCL 670** 4 (4,0)
Issues in Urban Public Policy: PR: C.I. Study of characteristic policy issues which arise in urban political systems, and the consideration of various public responses to those issues.
- PCL 672** 4 (4,0)
Issues in State Public Policy: PR: C.I. Analysis of selected aspects of policy issues occurring in the American states with attention given to both single state and comparative studies.

- PCL 673** 4 (4,0)
Issues in National Public Policy: PR: C.I. Study of the establishment and evaluation of selected national issues and priorities, means of implementation, and impacts of government programs.
- PCL 675** 4 (4,0)
Issues in International Public Policy: PR: C.I. Analysis of domestic and foreign inputs influencing foreign policy formulation and execution, with extended analysis devoted to executive structures and decision making behavior.
- PCL 676** 4 (4,0)
Issues in Economic Public Policy: Examination from the perspectives of organization and politics of selected fiscal and monetary policy issues; emphasis on the limitations economic factors place upon policy making.
- PCL 677** 4 (4,0)
Issues in Public Administration: PR: C.I. Analysis of both substantive and theoretical issues confronting the broad spectrum of contemporary public administration; consideration of the "new public administration" movement.

PSYCHOLOGY

- PSY 201** 4 (4,0) F,W,S,Su
General Psychology: The basic principles, theories, and methods of contemporary psychology.
- PSY 202** 4 (4,0) F,W,S,Su
General Psychology: PR: PSY 201. A continuation of PSY 201.
- PSY 300** 4 (4,0)
Applied Psychology: Applications of principles of psychology to personal adjustment, industry, and education.
- PSY 301** 5 (3,2) F,W,S,Su
Basic Learning Processes: PR: PSY 201 and PSY 202. A survey of theories and research findings from basic laboratory investigation of learning phenomena. Lec.-Lab.
- PSY 302** 5 (3,2)
Complex Human Learning: PR: PSY 201 and PSY 202. Selected topics from theories and research on complex human learning and problem solving. Lec.-Lab.
- PSY 303** 4 (4,0)
Physiological Psychology: PR: PSY 201 and PSY 202. Physiological bases of behavior.
- PSY 304** 5 (3,2)
Perception: PR: PSY 201 and PSY 202. Consideration of physical and psychological variables in perceptual phenomena. Lec.-Lab.
- PSY 305** 4 (4,0)
Psychological Measurement: PR: PSY 201, PSY 202, and STAT 201. Theory of test construction and consideration of selected measures of psychological characteristics.
- PSY 306** 4 (4,0)
Psychology of Adjustment: Psychological principles of adjustment; application of psychology to problems in living.
- PSY 307** 4 (4,0)
Motivation: PR: PSY 201 and PSY 202. Psychological and physiological aspects of human motivation.

- PSY 308** 4 (4,0)
Social Psychology: PR: PSY 201 and PSY 202. Effects of social situations and social variables on the behavior of individuals.
- PSY 309** 4 (4,0)
Personality Theory: PR: PSY 201 and PSY 202. A survey of theory and research on the development of personality characteristics. Lec.-Lab.
- PSY 310** 4 (4,0)
Abnormal Psychology: PR: PSY 201 and PSY 202. Classification, causation, and treatment of deviant patterns of behavior.
- PSY 312** 4 (4,0)
Clinical Psychology: PR: PSY 309 and PSY 310. Consideration of psychodiagnostics, behavioral modification techniques and clinical research. Lec.-Lab.
- PSY 313** 4 (4,0)
Developmental Psychology: PR: PSY 201 and PSY 202. The effects of genetic, psychological, maturational and social factors on behavior at various stages of development.
- PSY 314** 4 (4,0)
Industrial Psychology: PR: PSY 201, PSY 202, and STAT 201. Psychological principles of employee selection, training, and morale.
- PSY 315** 4 (4,0)
Drugs and Behavior: PR: PSY 201. Effects of certain drugs upon the nervous system, behavior, and society. Causes of drug abuse and the impact on mental health.
- PSY 321** 4 (4,0)
Principles of Behavior Modification: PR: PSY 301. An examination of the control of behavior through applications of principles and theories of learning. Examples are drawn from clinical and social psychology and from child rearing.
- PSY 322** 4 (4,0)
Clinical Psychology: Research Practicum: PR: PSY 301, PSY 310, and PSY 495. Research and practicum experience in mental health related facilities located in the immediately surrounding area.
- PSY 323** 4 (4,0)
Comparative Psychology: PR: PSY 201 and PSY 202. A study of comparative behaviors of lower animals.
- PSY 330** 4
Psychology of Women: Examination of the psychological impact of changing sex roles on women in modern society. Topics include childrearing, working women, sex differences in personality and cognition.
- PSY 333** 4 (4,0)
Development of Language and Conceptual Behavior: PR: PSY 301. Normal ontogeny of language and conceptual behavior from infancy to adulthood; disorders of linguistic and conceptual development and their remediation; key theoretical interpretations.
- PSY 335** 4
Sexual Behavior: A discussion of physiological, social, and clinical aspects of human sexuality.
- PSY 340** 4 (4,0)
Environmental Psychology: PR: PSY 201, PSY 202, and STAT 201. An investigation of

theory and research relevant to the relationship between the physical environment and the behavior of man.

PSY 343 4 (4,0)

Educational Psychology: PR: PSY 201 and PSY 202. Application of psychological principles and research methods to classroom behavior and learning.

PSY 353 4 (4,0)

The Psychology of Racial Prejudice: Examination of literature relating to prejudice toward ethnic groups; effects of racism on individuals, development and maintenance of prejudice, and possible ways to reduce prejudice.

PSY 370 4 (4,0)

Interviewing and Counseling Techniques: PR: PSY 201, 202 and 309. A survey into practical experience of interviewing and counseling procedures in most facets of psychology and related fields.

PSY 372 4 (4,0)

Psychological Approaches to Mental Retardation: Psychological approaches to the problems of mentally retarded citizens including diagnosis, environment versus heredity, legal restrictions, institutionalization, as well as methods of behavioral remediation.

PSY 390 4 (1,8)

Undergraduate Field Work: Placement in a community agency for supervised experience in applications of psychology to community problems.

PSY 401 2 (2,0)

Senior Research Proposal: PR: STAT 401 and Senior standing. Study in depth of bibliography and methods of psychological research. Each student will write, and have approved, a proposal for an original piece of research.

PSY 403 5 (3,2)

Introduction to Neuropsychology: PR: PSY 303. Study of brain function with particular emphasis on human behavior. Lec.-Lab.

PSY 405 4 (4,0)

History and Systems of Psychology: PR: PSY 301 and PSY 309. Historical development of psychology with emphasis on classical theoretical positions.

PSY 411 4 (4,0)

Statistical Methods in Psychology: PR: One course in statistics. Standard scores, confidence intervals, sampling distributions, hypothesis testing, correlation and regression as applied to research in psychology.

PSY 415 5 (2,3)

Individual Intelligence Testing: PR: PSY 305. A consideration of the nature of intelligence and its measurement. Supervised training in Stanford-Binet and Wechsler testing. Lec.-Lab.

PSY 605 4

Psychological Testing I: PR: Graduate admission and C.I. Theory of test construction including test reliability and validity.

PSY 606 4 (4,0)

Psychological Testing II: PR: Graduate admission and C.I. An examination of the most commonly used instruments in psychological testing and a critical evaluation of their potential utility.

- PSY 607** 4 (4,0)
Human Motivation: PR: Graduate admission and C.I. Survey of the area of industrial motivation with emphasis on empirical findings.
- PSY 615** 4 (0,4)
Counseling Practicum: PR: Graduate admission and C.I. Application of counseling techniques in a supervised setting.
- PSY 640** 4 (4,0)
Consumer Psychology: PR: Graduate admission and C.I. Application of psychology to consumer behavior. Survey of research in product selection, markets, and advertising.
- PSY 641** 4 (4,0)
Organizational Psychology: PR: Graduate admission and C.I. Survey of present theories in Organizational Psychology. Application of psychological research to organizational functioning.
- PSY 650** 4 (4,0)
Job Analysis and Personnel Selection: PR: Graduate admission and C.I. Research in and application of job evaluation methods and selection models.
- PSY 651** 4 (4,0)
Training and Performance Appraisal: PR: Graduate admission and C.I. Survey of problems of industrial training and performance appraisal. Analysis of relevant research in problems of evaluation of training effectiveness.
- PSY 654** 2 (2,0)
Psychology Practicum: PR: Graduate admission and C.I. Supervised practice in assessment and intern intervention techniques. (May be repeated for credit).
- PSY 655** 4-12
Community Psychology Internship: PR: Graduate admission, 2nd year status and C.I. Supervised placement in community setting. (May be repeated for credit).
- PSY 656** 4-12
School Psychology Internship: PR: Graduate admission, 2nd year status and C.I. Supervised placement in school setting.
- PSY 660** 4 (0,4)
Industrial Psychology Practicum I: PR: Graduate admission and C.I. Supervised research in industry.
- PSY 661** 4 (0,4)
Industrial Psychology Practicum II: PR: Graduate admission and C.I. Supervised research in industry.
- PSY 662** 4 (0,4)
Industrial Psychology Practicum III: PR: Graduate admission and C.I. Supervised research in industry.
- PSY 667** 4 (4,0)
Problems in Correctional Psychology: PR: Graduate admission and C.I. An investigation of some of the major problems facing psychologists working in correctional settings. May be repeated for credit.
- PSY 668** 4 (4,0)
Problems in Mental Health: PR: Graduate admission and C.I. An investigation of some of the major problems facing psychologists working in Mental Health clinics. May be repeated for credit.

- PSY 669** 4 (4,0)
Problems in School Psychology: PR: Graduate admission and C.I. An investigation of some of the major problems facing psychologists working in school systems. May be repeated for credit.
- PSY 670** 4 (4,0)
Teaching and Training Evaluation: PR: Graduate admission and C.I. Evaluation of effective teaching methods and practicum experience.
- PSY 671** 4 (4,0)
Individual Intelligence Testing: PR: Graduate admission, PSY 683 and C.I. A survey of commonly used individual tests used to measure intelligence of both children and adults.
- PSY 673** 4 (4,0)
Mental Retardation: PR: Graduate admission, PSY 683, PSY 684, and C.I. Theory, research and remedial techniques dealing with mental retardation.
- PSY 675** 4 (4,0)
Implementation and Evaluation: PR: Graduate admission and C.I. Strategies and procedures for evaluating programs in community and school settings.
- PSY 676** 4 (4,0)
Clinical Psychopharmacology: PR: Graduate admission, PSY 673 and C.I. Physiological and clinical effects of various psychomimetic and psychoactive drugs.
- PSY 677** 4 (4,0)
Learning Disabilities: PR: Graduate admission and C.I. Theory, research and remedial techniques dealing with learning disabilities and other factors interfering with learning such as motivation, language disorders and perceptual-motor deficits.
- PSY 680** 4 (4,0)
Personality Testing: PR: Graduate admission, PSY 683, PSY 671 and C.I. Survey of commonly used individual and group personality techniques.
- PSY 681** 4 (4,0)
Psycho-educational Diagnosis: PR: Graduate admission and C.I. Administration and interpretation of psychoeducational tests. Emphasis on evaluation of exceptional children.
- PSY 683** 4 (4,0)
Foundations of Psychology I: PR: Graduate admission and C.I. An intensive survey in the areas of testing, learning, and motivation stressing recent research.
- PSY 684** 4 (4,0)
Foundations of Psychology II: PR: Graduate admission and C.I. An intensive survey in the areas of developmental, personality, and social psychology stressing recent research.
- PSY 686** 4 (4,0)
Clinical Intervention I: PR: Graduate admission and C.I. Various theories of counseling and their evaluated efficiency, including the problems of research in counseling techniques.
- PSY 687** 4 (4,0)
Clinical Intervention II: PR: Graduate admission. PSY 683 and C.I. Introduction to the principles and procedures of behavior modification as a clinical intervention technique.
- PSY 688** 4 (4,0)
Clinical Intervention III: PR: Graduate admission, PSY 684 and C.I. Principles and procedures of the various therapeutic techniques excluding client-centered and behavior modification models.

PUBLIC ADMINISTRATION

PAD 324 4 (4,0)

Urban Geography: The city as a geographical phenomenon created by human efforts, its historical development; patterns of land use as related to economic, sociological and political influences. (Same as GEOG 350).

PAD 350 4 (4,0) F,W

Introduction to Public Administration: PR: C.I. Analysis of administrative theories and the process of implementing public policies in a democratic society.

PAD 411 4 (4,0)

Public Policy Administration: Problems of values, interests, and objectives and their impact on execution of public programs, stressing the relationship between policies and administration.

PAD 414 4 (4,0) F

Metropolitan Administration: PR: PAD 350 or C.I. Study of the formal and informal socio-political structures that govern urban areas; emerging patterns of government, and management practices in urban and suburban settings.

PAD 416 12 (0,12) F,W,S,Su

Public Administration Internship: PR: C.I. Internship in municipal, county, state or federal government, including assignments in such fields as personnel, planning, budget and fiscal, procurement and public safety.

PAD 440 4 (4,0)

Comparative Public Administration: PR: C.I. An analysis of administrative structures and processes of selected countries, including an evaluation of the influence of economic, social and political environment on bureaucratic functions and the role of the executive.

PAD 441 4 (4,0) F,S

Comparative Public Administration II: PR: C.I. A case study approach to the problems of administration in diverse political environments stressing patterns of organization, personnel systems, field services and administrative style.

PAD 510 4 (4,0)

Administrative Problems of the Metropolitan Community: PR: PAD, 350 or C.I. Senior or graduate standing. This course focuses on the processes of policy formulation and execution in the metropolitan community, including governmental restructure and area-wide policy formulation and implementation.



Q

QUANTITATIVE BUSINESS ANALYSIS

QBA 312

4 (4,0)

Quantitative Analysis I: PR: MATH 320. Mathematical models and techniques used in the formulation, solution, and analysis of business problems. Linear, non-linear and dynamic programming, network, decision tree analysis; queueing, inventory, and decision theory. Computer applications.

QBA 313

4 (4,0)

Quantitative Analysis II: PR: QBA 312. Continuation of QBA 312.

QBA 450

4 (4,0)

Business Simulation: PR: MATH 320 and COMP 310. An introduction to simulating various aspects of the business enterprise. Topics include the simulation modeling process, applicable simulation languages, and model formulation, analysis, and validation.

QBA 451

4 (4,0)

Quantitative Applications to Business Problems: PR: QBA 313 or C.I. Applications of quantitative analysis to complex business problems. Emphasis is on analyzing specific problem situations and deciding on appropriate quantitative techniques to be applied.



R

RADIO/TELEVISION

- RTV 337** 4 (1,3)
Broadcast Techniques: Introduction to the radio and television studio. Utilization of studio operating techniques and equipment (consoles, recorders, cameras, etc.) for use in educational and commercial broadcasting.
- RTV 340** 4 (4,0)
Radio Production: PR: RTV 337 or C.I. The production of music (live and recorded), talk, interview, discussion, sports, and documentary including performance (talent and announcing) and direction.
- RTV 341** 4 (4,0)
Television Production: PR: RTV 337 or C.I. Emphasis on the coordination of talent, cameras, visuals, audio and lighting with the dramatic values of the presentation.
- RTV 342** 4 (4,0)
Broadcast Journalism I: PR: JRN 319 or C.I. Historical, legal, and quasi-legal influences on broadcast news; introduction to news sources, writing and interviewing techniques for radio-television news.
- RTV 343** 4 (4,0)
Television Talent Techniques: A study of communication problems on camera and microphone. Development of performance skills in announcing, interviewing, narrating, and reporting.
- RTV 344** 4 (4,0)
Broadcast Continuity and Programming I: Practice in the preparation of written commercial copy for radio and television. Examination of program practices and traffic systems.
- RTV 345** 4 (4,0)
Films for Television: Principles and practices of 8mm and 16mm film usage within the television industry.
- RTV 347** 4 (4,0)
Television Scene Design: PR: RTV 337 or C.I. Study, application, and creative utilization of staging, lighting, graphics, special effects, costuming, and make-up for television production.
- RTV 355** 4 (4,0)
Foundations of Broadcasting: Nature of the media, the mechanics of operation, history, economics, programming, and internal and external control.
- RTV 441** 4 (4,0)
Television Directing: PR: RTV 341. The planning, preparation and directing of programs with emphasis on dramatic values of composition, movement, position, action, timing, pacing, climax, ascendant and descendant values; integration of the parts to the whole.
- RTV 444** 4 (4,0)
Broadcast Continuity and Programming II: PR: RTV 344 or C.I. Preparation of documentaries and dramatic writing for television and radio.
- RTV 445** 4 (1,3)
Television Film Production: PR: C.I. Planning and preparation of filmed documentaries, public service and commercial productions. (Laboratory hours to be arranged).

RTV 446 **4 (4,0)**

Radio, Television and Society: A study of the impact of electronic media upon the habits, customs and thinking of our times. Considerations of internal media problems.

RTV 447 **4 (4,0)**

Television Film Documentary: PR: C.I. Historical developments, styles, and production techniques of the television film documentary.

RTV 448 **4 (4,0)**

Broadcast Regulations: PR: RTV 355 or RTV 342. Federal, state, local and self-regulator agencies and practices which govern electronic media.

RTV 450 **4 (4,0)**

Broadcast Journalism II: PR: RTV 342. Principles and practice of news preparation for electronic media.

RTV 451 **4 (4,0)**

Radio-Television Advertising: PR: COM 434 or C.I. Radio and television as advertising media; advertisers' demands and budget; appropriate programs for the sponsors' needs; writing of commercial continuity.

RTV 452 **4 (4,0)**

Broadcast Criticism: Evaluation and criticism of past and present radio and television programs, policies, and critics. Concentration on the problem of criteria development.

RTV 453 **4 (4,0)**

Educational Television: A study of radio and television in public education. Emphasis on the development and status of public broadcasting.

RTV 454 **4 (4,0)**

Instructional Broadcasting: Learning theory applied to the creation, production, and dissemination of lessons via electronic media. Introduction to and practicum in radio and television studios as well as lesson presentation.

RTV 455 **4 (4,0)**

International Broadcasting: Comparative analysis of national broadcast systems. World broadcasting as a social, political and economic force.

RTV 458 **4 (4,0)**

Broadcast Management: PR: RTV 448. Consideration of broadcast management problems in station operations at the local, regional, and national levels.

RADIOLOGIC TECHNOLOGY

RTE 340 **3 (3,0)**

Fundamentals of Radiologic Technology: PR: Admission to the professional phase of the RTE program or C.I. Historical science of radiology. Fundamentals of radiation, terminology, procedures, protection, patient care, professional ethics and medio-legal aspects as applied to radiology.

RTE 342 **3 (0,30)**

Directed Clinical Education I: CR: RTE 340. Supervised clinical practice in the usage of radiation exposures, protection and departmental procedures with film critique.

RTE 350 **4 (4,0)**

Radiographic Procedures: PR: C.I. Radiographic anatomy and physiology with related positioning. Manual and automatic processing and film critique.

- RTE 352** 3 (0,28)
Directed Clinical Education II: PR: RTE 342, CR: RTE 350. Supervised clinical practice in more advanced radiographic techniques, positioning, and darkroom procedures.
- RTE 360** 4 (4,0)
Radiographic Quality Control: PR: C.I. Survey of medical and surgical disease and usage of radiographic accessories related to disease, patient habitus, technique variations including darkroom control and film critique.
- RTE 362** 3 (0,28)
Directed Clinical Education III: PR: RTE 352, CR: 360. Supervised clinical practice in radiographic procedures and positioning with emphasis on factors affecting quality control including darkroom procedures and equipment.
- RTE 380** 4 (4,0)
Radiologic Technology Physics: PR: C.I. Electrical generation of ionizing radiation for diagnostic and therapeutic usage. Biological effects of radiation and advanced protection.
- RTE 382** 3 (0,28)
Directed Clinical Education IV: PR: RTE 362, CR: RTE 380. Supervised clinical practice in advanced diagnostic procedures, techniques, equipment and protection. Film critique included.
- RTE 440** 3 (3,0)
Special Radiographic Procedures: PR: Completion of all junior level RTE courses or C.I. Specialized and complex procedures, pharmacology, and systemic requirements of constant media with related nursing procedures. Film critique.
- RTE 442** 3 (0,30)
Directed Clinical Education V: PR: RTE 382, CR: RTE 440. Supervised clinical practices with emphasis on special procedures, operating theatre, portable, intraoral and pediatric practice.
- RTE 450** 4 (4,0)
Therapy-Nuclear Medicine Techniques: PR: C.I. Variation of equipment, treatment planning, shielding protection and dose calculation. Usage of radioactive elements, detection and recording equipment as applied to medicine.
- RTE 452** 3 (0,16)
Directed Clinical Education VI: PR: RTE 442, CR: RTE 450. Supervised clinical practice in therapeutic treatment of diseases and radioactive isotopes detection.
- RTE 454** 3 (0,16)
Clinical Practice I: PR: C.I., CR: RTE 452. Clinical practice under general supervision in radiographic therapeutic and nuclear medicine procedures.
- RTE 460** 5 (5,0)
Radiographic Education-Administration: PR: C.I. Evaluation and integration of radiographic theory, practice, communication, management; department and interdepartmental organization; equipment maintenance.
- RTE 462** 4 (0,16)
Directed Clinical Education VII: PR: RTE 452, CR: RTE 460. Supervised clinical practice in radiographic advanced departmental procedures and management.
- RTE 464** 3 (0,18)
Clinical Practices II: PR: RTE 454, CR: RTE 462. Clinical practice under general supervision in advance phases of radiographic procedure.

RTE 480 **5 (5,0)**

Radiologic Technology Analysis: PR: C.I. Comprehensive review, evaluation and analysis of all phases of radiology. Preparation for continuing education, advancement and opportunities with survey of current trends and practices.

RTE 482 **4 (0,16)**

Directed Clinical Education VIII: PR: RTE 462, CR: RTE 480. Supervised clinical practices in selected phases of radiographic procedures including advanced special procedures.

RTE 484 **4 (0,18)**

Clinical Practice III: PR: RTE 464, CR: RTE 482. Clinical practices under general supervision in all phases of diagnostic, therapeutic, nuclear medicine, instructional and departmental procedures.

RELIGION

REL 300 **4 (4,0) F,W,S**

The Hebrew and Christian Heritage: An examination of the Old and New Testaments as religious documents; a study of their emergence in the socio-political context of the Ancient Near East.

REL 315 **4 (4,0) S**

Religions of China and Japan: A study of basic concepts in Shinto, Taoism, Confucianism, Buddhism, and Zen.

REL 317 **4 (4,0) W**

Hinduism: A study of Hindu religious ideas and scriptures; the Vedas, the Upanishads, the Bhagvat Gita, and later works.

REL 318 **4 (4,0) F**

Islam: An inquiry into the foundations and development of Islamic thought from earliest times to modern in various parts of the world.

REL 319 **4 (4,0)**

Ancient Near Eastern Religions: An investigation of the principal religions of the ancient Near East with special emphasis on Mesopotamian, Canaanite, and Egyptian religions.

REL 321 **4 (4,0)**

Religion in America: The effect of Puritan, Quaker, Anglican, and Catholic traditions on various regions; the phenomenon of evangelism; the rise of new sects such as Mormonism.

REL 401 **4 (4,0) S**

Comparative Religion: An analysis of the nature of religious experience in several of the world's major religions, showing their similarities and differences in thought, action, and fellowship.

REL 441 **4 (4,0) W**

Modern Theology: Explores the revolution in religious thought prompted by Kierkegaard, Tillich, Barth, Niebuhr, and Bonhoeffer, and the secular trends suggested by Nietzsche, Altizer, Cox, and Hamilton.

REL 471 **4 (4,0) S**

Mythology: An examination and interpretation of myths dealing with gods, divine heroes, and sacred events.

REL 473 **4 (4,0) F**

The Religious Quest: A study of major religious statements from the desert Fathers to Kafka and Kazantzakis, and of the human and cultural circumstances from which they emerged.

REL 477

4 (4,0) W

Mysticism: The modes and aims of the mystic, both Eastern and Western, as seen in art, music, and literature.

RESPIRATORY THERAPY

RTH 301

2 (0,20) W

Clinical Practice I: PR: C.I. Basic equipment and patient care. IPPB Therapy. Cleaning, sterilization and maintenance procedures. Suction techniques.

RTH 302

2 (0,20) S

Clinical Practice II: PR: C.I. Patient care with advanced respiratory equipment. Tracheostomy care. Advanced suction techniques and introduction to cardiopulmonary resuscitation.

RTH 330

3 (3,0) S

Cardiopulmonary Resuscitation: PR: C.I. Resuscitative procedures in respiratory and cardiac emergencies. Airway maintenance. Defibrillation and post-resuscitative care. Drowning, underwater, aviation, and space physiology.

RTH 331

1 (0,3) S

Cardiopulmonary Resuscitation Laboratory: CR: RTH 330. Adult intubation and available airways. Defibrillation practice.

RTH 340

3 (3,0) S

Introduction to Pharmacology: Regulatory agencies and the regulation concerning the use of drugs. Review of pharmacological mathematics. Drug absorption and distribution in the human body.

RTH 350

3 (3,0) F

Introduction to Respiratory Equipment: Fundamental functions of basic inhalation therapy equipment. Systems of oxygen storage. Safety precautions. Preparation for clinical practice.

RTH 351

1 (0,3) F

Respiratory Equipment Laboratory: CR: RTH 350. Procedures in cleaning, sterilizing, maintenance, and repair of equipment.

RTH 352

3 (3,0) W

Respiratory Equipment Function: PR: RTH 350. Function of advanced respiratory equipment. Arterial blood gas equipment. Prolonged mechanical ventilation. Bedside respiratory volumetric monitoring. Evaluation prior to and during weaning from respirator.

RTH 353

1 (0,3) W

Respiratory Equipment Function Laboratory: CR: RTH 352. Care and sterilization of respirators. Calibration of blood gas analyzers. Care and standardization of bedside volumetric equipment.

RTH 370

3 (3,0) W

Pulmonary Physiology: PR: CHEM 113 and PHYS 380. Normal ventilation of respiration. Response to gases and ions. Lung reflexes. Ventilatory and mechanical factors. Pulmonary circulation. Gas diffusion and transport. Manual respiratory adjustments.

RTH 371

1 (0,3) W

Pulmonary Physiology Laboratory: CR: RTH 370. Experiments in ventilation mechanics, diffusion, circulation, and gas transport.

RTH 380

3 (3,0) S

Respiratory Pathology: PR: ZOOL 324. Cellular pathology with emphasis on pathology of

respiratory and cardiovascular systems.

RTH 381 1 (0,3) S
Respiratory Pathology Laboratory: CR: RTH 380. Macro — and microscopic identification of respiratory diseases. Gross pathology.

RTH 401 2 (0,20) F
Clinical Practice III: PR: C.I. Advanced cardiopulmonary resuscitation. Patient care with advanced cardiopulmonary equipment.

RTH 402 2 (0,20) W
Clinical Practice IV: PR: C.I. Pulmonary functions studies. Care of patients with medically treated diseases. Exposure to the functional role of the department administrator.

RTH 403 2 (0,20) S
Clinical Practice V: PR: C.I. Pediatrics. Pulmonary rehabilitation. Advanced pulmonary function testing. Application of diagnostic techniques in cardiopulmonary diseases and surgical techniques in open-heart, thoracic and general surgery.

RTH 410 2 (1,2) S
Pulmonary Rehabilitation: PR: C.I. The motor unit, exercise and fatigue. Therapeutic exercise, exercise in cardiopulmonary disease. Postural drainage, and vibration techniques.

RTH 420 3 (3,0) S
Respiratory Pediatrics: PR: C.I. Lung development, circulation, and respiratory regulation in fetus and newborn. Pulmonary function in congenital anomalies, infant infections, and hyaline membrane disease. New born resuscitation. Childhood respiratory diseases.

RTH 430 3 (3,0) S
Cardiopulmonary Therapy: PR: IT 370. Introduction to diagnostic and surgical techniques in thoracic and general surgery.

RTH 431 1 (0,3) S
Cardiopulmonary Therapy Laboratory: CR: RTH 430; PR: C.I. Student participation in cardio-catheterization and extra-corporeal circulation. Operating theatre observation. Extensive patient round and clinical observations.

RTH 440 3 (3,0) F
Medical Pharmacology I: PR: RTH 340. Drugs in cardiovascular diseases; effects on nervous system, gastrointestinal tract, and neuroeffectors. Depressants and stimulants; influence on metabolism and endocrines. Anesthetics, chemotherapy. Poisons and antidotes.

RTH 442 3 (3,0) W
Medical Pharmacology II: PR: RTH 440. Continuation of RTH 440.

RTH 460 3 (3,0) W
Medicine: PR: RTH 370. Disease states treated medically in conjunction with one or more modalities of respiratory therapy.

RTH 461 1 (0,3) W
Selected Topics in Respiratory Therapy: CR: RTH 460. Patient rounds and discussion regarding current trends and techniques in respiratory care.

RTH 462 3 (3,0) F
Pulmonary Function Studies: PR: C.I. Detailed procedures and tests to provide objective information for diagnosis of respiratory diseases.

RTH 463 1 (0,3) F
Pulmonary Function Laboratory: CR: RTH 462. Testing procedures and experiments in normal and abnormal respiratory functions.

RUSSIAN**RUS 101****4 (4,1) F**

Elementary Russian Language and Civilization: Designed to initiate the student to the major language skills; listening, speaking, reading, and writing, in addition to an introduction to Russian culture.

RUS 102**4 (4,1) W**

Elementary Russian Language and Civilization: PR: RUS 101 or equivalent. Continuation of RUS 101.

RUS 103**4 (4,1) S**

Elementary Russian Language and Civilization: PR: RUS 102 or equivalent. Continuation of RUS 102.

RUS 201**4 (4,1) F**

Intermediate Russian Language and Civilization: PR: RUS 103 or equivalent. Designed to continue development of language skills at the intermediate level, together with a review of grammar, idiomatic expressions, extensive reading, and further study of Russian culture.

RUS 202**4 (4,1) W**

Intermediate Russian Language and Civilization: PR: RUS 201 or equivalent. Continuation of RUS 201.

RUS 203**4 (4,1) S**

Intermediate Russian Language and Civilization: PR: RUS 202 or equivalent. Continuation of RUS 202 with greater emphasis on Russian civilization from the Middle Ages to the present.

RUS 301**4 (4,0)**

Russian Conversation: PR: RUS 203 or equivalent. Development of skills in conversation and comprehension through practice. This course may be repeated for credit. When repeated, credit will apply to general electives only.

RUS 303**4 (4,0)**

Russian Composition: PR: RUS 203 or equivalent. Development of skills in composition. This course may be repeated for credit. When repeated, credit will apply to general electives only.



S

SCIENCE

SCI 480 3 (3,0)

Science in Human Affairs: Readings and discussion of major recent articles concerning the interaction of science and scientific thought with the quality of human life.

SCI 481 3 (3,0)

Our Chemical Environment: An examination of the role of modern chemical technology in our society — its beneficial and detrimental effects.

SCI 482 3 (3,0)

The Development of Modern Chemistry: A look at man's changing theories of matter, energy, the universe, and himself with emphasis on the scientific accomplishments of the past two centuries.

SCI 483 3 (3,0)

Physics in Society: Physical processes related to development and stability of society. Topics selected from music, art, transportation, thermodynamics, cybernetics. Discussion emphasized, little mathematics required.

SCI 484 3 (3,0)

Biological Nature of Man: Man's behavior, reproduction, development, diversity, heredity, evolution, population control, aggression, and biological needs in contemporary society.

SCI 485 3 (3,0)

Biology and Society: Biological concepts applied to current human problems — food production, pollution, disease, extinction, and disrupted ecosystems.

SCI 486 3 (3,0)

History and Future of Health Care: Development and philosophy of health care institutions; purposes of health agencies, organizations and allied health professionals; new trends in health care delivery.

SCI 487 3 (3,0)

Geology of Our National Parks and Monuments: Survey of the unique geologic features preserved in our national park system and discussion of the processes that gave rise to these features.

SOCIAL SCIENCE

SSC 490 2 (2,0)

Senior Seminar: Social Sciences in Human Affairs: An overview of the development, purposes, and functioning of the social sciences in modern society. Primarily intended for senior students.

SOCIOLOGY

Introductory Sequence: SOC 201, 202.

Theory and Research Sequence: SOC 304, 306, 307, 495.

Social Psychology Area: SOC 352, 353, 354, 451.

Anthropology Concentration: SOC 310, 311, 314, 315, 316, 402.

Social Work Concentration: SOC 340, 341, 342, 343, 412, 498.

Social Organization: SOC 325, 326, 333, 335, 407, 411, 416.

Social Deviance: SOC 331, 344, 345, 346, 348, 350.

SOC 201 4 (4,0) F,W,S,Su
General Sociology: The basic principles, theories and methods of contemporary sociology.

SOC 202 4 (4,0) F,W,S,Su
General Sociology: PR: SOC 201. Continuation of SOC 201.

SOC 304 4 (4,0) F,S
The Development of Social Thought: PR: SOC 201. An overview of theories concerning the nature of man as a "social being." The nature of society from the beginnings of the scientific study of man's life to World War II.

SOC 306 4 (4,0) W
Modern Sociological Thought: PR: SOC 201 and SOC 304. A study of major European and American contributors to, and schools of, modern sociology from World War II to the present.

SOC 307 4 (4,0) S
The Sociology of Religion: Patterns in religious behavior in various societies with primary emphasis on myth, rite, taboo and festival as social phenomena.

SOC 308 4 (4,0) S
Ethnology of North American Indians: A survey of the aboriginal cultures of North America with emphasis on the pre-contact cultural condition.

SOC 309 4 (4,0) F
Plains Indians of North America: A study of the social and cultural history of the Indians of the North American High Plains.

SOC 310 4 (4,0) F,S
Physical Anthropology and Archaeology: Introductory anthropological survey of physical anthropology and archaeology. Survey of man's place among primates, evolution, genetics, and prehistoric cultural development to the earliest civilizations worldwide.

SOC 311 4 (4,0) W,Su
Social Anthropology: Framework and principles of sociocultural organization as exemplified among various cultures and ethnic groups.

SOC 312 4 (4,0) F,S
Old World Prehistory: PR: SOC 310 and SOC 311. Fundamentals of archaeological discipline and research techniques. Surveys prehistoric record of cultural development from earliest times to rise of civilizations in all areas of Old World.

SOC 313 4 (4,0) W
New World Prehistory: PR: SOC 310 and SOC 311. Essentials of New World archaeology, methods, and excavations. Surveys space-time framework of Native American Indian cultures and civilization from earliest times to A.D. 1500.

SOC 314 4 (4,0) W
Archaeological Methods: PR: SOC 310 or 311. A seminar surveying archaeological field and laboratory techniques; i.e., bone preservation, zooarchaeology, ethnobotany, cataloguing, classification, and laboratory analysis.

- SOC 315** 4 (4,0)
Physical Anthropology: PR: SOC 310 and SOC 311. The study of man as a product of the evolutionary process. Study and analysis of diversity among present human populations.
- SOC 316** 4 (4,0)
Comparative Social Organization: PR: SOC 310 and SOC 311. Introduction to anthropological viewpoints on role of marriage, family, kin groups, and descent in the study of economic, political and ideological aspects of social organization.
- SOC 320** 4 (4,0) F
Collective Behavior: PR: SOC 201. Analysis of relatively unstructured social situations such as disasters, mobs, crowds, mass hysteria, protests, fads and fashions.
- SOC 325** 4 (4,0) F,S
Urban Sociology: PR: SOC 201. Historical roots of urbanization. Analysis and impact of community change on social organizations in modern industrial societies.
- SOC 326** 4 (4,0) F
Rural Sociology: PR: SOC 201. Rural American life, its resources, and the problems of changing patterns of rural social structure.
- SOC 331** 4 (4,0) F,W,S,Su
Social Problems: Analysis of major social problems such as mental disorders, sexual deviance, racial discrimination, poverty, community disorganization, and violence.
- SOC 333** 4 (4,0) F,S
Social Psychology of Management: A social psychological analysis of processes relating to developing and changing social attitudes, work motivation and satisfaction, decision making, and social structure affecting managerial skills.
- SOC 335** 4 (4,0) S
Social Institutions: PR: SOC 201. Social institutions, social differentiation, and social control, with emphasis on American and other modern societies.
- SOC 336** 4 (4,0) S
Social Stratification: PR: SOC 201. Study of class, status and power; cultural variations in stratification system; patterns of mobility and change.
- SOC 340** 4 (4,0) F,S
Social Welfare: A Social Institution: PR: SOC 201. An introduction to social welfare as an institution. The historical and philosophical development of social welfare as related to current social welfare objectives and programs.
- SOC 341** 4 (4,0)
Social Work: Principles and Methods: PR: SOC 340. A theoretical consideration of the concepts and methods of social work practice and the values, activities and roles of social workers in various practice settings.
- SOC 342** 4 (4,0) W
Government and Social Welfare: PR: SOC 340. The role of federal, state, and local government in social welfare. Laws, policy formulation, administration, and current issues will be examined.
- SOC 343** 4 (4,0) W
The Community and Social Welfare: PR: SOC 340. The community as a social system in meeting human needs. Emphasis on private agencies, including their organization, functions, interrelationships and coordination with governmental agencies.

- SOC 344** 4 (4,0) W,Su
Sociology of Deviant Behavior: PR: SOC 201. An examination of the nature, types and societal reactions to deviant behavior; special emphasis on the process of stigmatization and the emergence of deviant subcultures.
- SOC 345** 4 (4,0) W,S
Juvenile Delinquency: Types of delinquent behavior found among juveniles; possible causes and ways society attempts to treat the various forms of delinquency.
- SOC 346** 4 (4,0) F,S
Criminology: PR: SOC 201. Chief causes of anti-social behavior and current methods of prevention and reform. Effects of heredity and environment, prevalence of delinquency and crime, penal institutions.
- SOC 347** 4 (4,0) F
Sociology of Mental Illness: A sociological examination of mental illness as a social problem; legal aspects of mental illness, and the mental health professions.
- SOC 348** 4 (4,0) F
Sociology of Alcoholism: Introduction to the nature of alcoholism and review of its impact on society.
- SOC 349** 4 (4,0) F,W
Human Growth and Development: PR: SOC 340. Development of an understanding of individual physical, mental and emotional growth from birth to death, recognizing social and cultural influences on the development.
- SOC 350** 4 (4,0)
Interviewing in Social Work Practice: PR: SOC 340. Examination of interviewing as the primary medium through which social work is practiced with emphasis on the development of methods, skills and techniques.
- SOC 352** 4 (4,0) F,Su
Race and Ethnic Minorities in the United States: Theoretical analysis of the emergence, maintenance and disruption of patterns of racial and ethnic stratification.
- SOC 353** 4 (4,0)
Culture and Personality: PR: SOC 201. Theories of the variations in personality in relation to culture and group life in tribal and modern societies.
- SOC 354** 4 (4,0)
Sociology of Adolescence: An examination of the transition to adulthood in various societies with primary emphasis on initiation and the contemporary American problems centering around the "adolescent crisis."
- SOC 360** 4 (4,0) W
Social Change: A Historical and Theoretical Approach: PR: SOC 201. Concerned with the context and essential sources of social development and change.
- SOC 362** 4 (4,0)
Contemporary Woman and Society: An interpretation of the changing role of woman in contemporary American society.
- SOC 380** 4 (4,0)
Afro-American Social Problems: A study of contemporary Afro-American social problems in the United States.
- SOC 401** 4 (4,0) W,Su
Sociology of Small Groups: PR: SOC 201. Study of interaction among individuals in social

groups. Emphasis on the impact of interpersonal behavior on attitude dynamics, personality and self-concept, and decision-making.

SOC 402 **4 (4,0) F**

Method and Theory in Anthropology: PR: SOC 310 and SOC 311. Central methodological and theoretical concerns of anthropology in its emergence as a separate discipline and field of study.

SOC 403 **4 (4,0)**

Anthropological Linguistics: PR: SOC 310, SOC 311, and ENG 371. Survey of anthropological linguistic field techniques in non-native cultures and application of linguistic theories to study of socio-cultural systems.

SOC 405 **4 (4,0) W**

Medical Sociology: Social organization of medical care: patterns of morbidity and mortality, social epidemiology and effects of disease, utilization of medical services, medical practice, programs and organizations.

SOC 406 **4 (4,0)**

Sociology of Aging: PR: SOC 201. An examination of the sociological aspects of aging in America including the needs of the aged and community resources to meet their needs.

SOC 407 **4 (4,0) W,Su**

The Family: PR: SOC 201. The family viewed functionally as a distinct social and cultural complex in the contemporary United States. Topics include: mate selection, marriage, adjustment, parenthood, post marriage.

SOC 408 **4 (4,0)**

Social Change in Developing Areas: PR: SOC 201 and one course in statistics. A study of growth problems in the emerging nations of Africa and Latin America.

SOC 411 **4 (4,0)**

Population: Concerned with the study of human population, its distribution, composition and change.

SOC 412 **15 (2,13) S**

Field Experience and Seminar: PR: SOC 340, 341, 342, 343, 349, and 350. Supervised learning experiences in local social agencies relating theory and academic preparation with practice. Eight hours per week plus two hour weekly seminar.

SOC 416 **4 (4,0) W**

Human Ecology: PR: SOC 201. Principles governing the spatial distribution of human populations and activities within an area.

SOC 420 **4 (4,0)**

Political Sociology: Sociological analysis of political and para-political groups; socio-economic variables of voting behavior; power elites; societies and systems of government. (Same as PCL 424).

SOC 433 **4 (4,0)**

Sociology of Occupations and Professions: An examination of occupations and professions from the sociological perspective. Emphasized are professional and occupational socialization, marginality and choice as well as women and work.

SOC 435 **4 (4,0)**

Sociology of Education: PR: 201. This course examines the sociological dimensions of the educational institutions including the impact of social structure on learning and the role of education in social change.

- SOC 451** 4 (4,0)
Contemporary Social Movements: PR: SOC 201. Causes and effects of various social movements in American society compared to large-scale upheavals throughout the West. Considers various theories of explanation.
- SOC 452** 4 (4,0)
Sociology of Drug Abuse: PR: SOC 201 or C.I. The analysis of the socio-cultural elements of the drug culture. This course will survey problems, impact on society, and possible solutions.
- SOC 501** 4 (4,0)
Proseminar in Sociology: PR: Six hours of Sociology and graduate level status or C.I. Study of culture, groups, demography, stratification, and culture and personality.
- SOC 502** 4 (4,0)
Proseminar in Sociology: PR: Six hours of Sociology and graduate level status or C.I. Study of social change, institutions, large organizations, and internal behavior.

SPANISH

- SPA 101** 4 (4,1) F
Elementary Spanish Language and Civilization: Designed to initiate the student to the major language skills; listening, speaking, reading, and writing, in addition to an introduction to Spanish culture.
- SPA 102** 4 (4,1) W
Elementary Spanish Language and Civilization: PR: SPA 101 or equivalent. Continuation of SPA 101.
- SPA 103** 4 (4,1) S
Elementary Spanish Language and Civilization: PR: SPA 102 or equivalent. Continuation of SPA 102.
- SPA 201** 4 (4,1) F
Intermediate Spanish Language and Civilization: PR: SPA 103 or equivalent. Designed to continue development of language skills at the intermediate level, together with a review of grammar, idiomatic expressions, extensive reading, and further study of Spanish culture.
- SPA 202** 4 (4,1) W
Intermediate Spanish Language and Civilization: PR: SPA 201 or equivalent. Continuation of SPA 201.
- SPA 203** 4 (4,1) S
Intermediate Spanish Language and Civilization: PR: SPA 202 or equivalent. Continuation of SPA 202 with greater emphasis on Spanish civilization from the Middle Ages to the present.
- SPA 301** 4 (4,0) F
Spanish Conversation: PR: SPA 203 or equivalent. Development of skills in conversation and comprehension through practice. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- SPA 303** 4 (4,0)
Spanish Composition: PR: SPA 203 or equivalent. Development of skills in composition. This course may be repeated for credit. When repeated, credit will apply to general electives only.
- SPA 311** 4 (4,0) F
Survey of Spanish Literature I: PR: SPA 203 or equivalent. Main literary currents and works

from the Middle Ages through the Renaissance and Baroque.

- SPA 312** **4 (4,0) W**
Survey of Spanish Literature II: PR: SPA 203 or equivalent. Main literary currents and works of the eighteenth and nineteenth centuries.
- SPA 313** **4 (4,0) S**
Survey of Spanish Literature III: PR: SPA 203 or equivalent. Main literary currents and works from the Generation of 1898 to the present.
- SPA 316** **4 (4,0)**
Survey of Latin-American Literature I: PR: SPA 203 or equivalent. Main literary currents and works from the colonial period to the nineteenth century.
- SPA 317** **4 (4,0)**
Survey of Latin-American Literature II: PR: SPA 203 or equivalent. Main literary currents and works of the nineteenth century.
- SPA 318** **4 (4,0)**
Survey of Latin-American Literature III: PR: SPA 203 or equivalent. Main literary currents and works of the twentieth century.
- SPA 321** **4 (4,0)**
Spanish Short Story: A study of representative 19th and 20th Century Spanish short stories and their authors.
- SPA 401** **4 (4,0)**
Spanish Phonetics and Diction: PR: SPA 303 or equivalent. Spanish phonology with emphasis on phonic groupings.
- SPA 402** **4 (4,0)**
Advanced Spanish Conversation: PR: SPA 301. Advanced conversation on directed topics from various disciplines: Literature, art, psychology, philosophy, music, business and the sciences.
- SPA 403** **4 (4,0)**
Advanced Spanish Composition: PR: SPA 303. Readings and written imitations of modern literary styles in the form of themes, sketches, poems and original stories.
- SPA 421** **4 (4,0)**
Golden Age Drama: PR: SPA 311. A study of the drama of the Golden Age with special emphasis on Lope, Tirso, Alarcon, and Calderon. The controversies on the Spanish theatre and its influence abroad.
- SPA 423** **4 (4,0)**
Cervantes I: PR: SPA 311. *Don Quixote* (Part I).
- SPA 424** **4 (4,0)**
Cervantes II: PR: SPA 311. *Don Quixote* (Part II).
- SPA 441** **4 (4,0)**
Nineteenth Century Spanish Literature: PR: SPA 312. Romanticism in Spanish literature.
- SPA 442** **4 (4,0)**
Nineteenth Century Spanish Literature: PR: SPA 312. The realistic and naturalistic novel in Spain.
- SPA 443** **4 (4,0)**
The Generation of 1898: PR: SPA 313. A study of the Generation's main authors and their works.

- SPA 451** 4 (4,0)
Twentieth Century Spanish Literature: PR: SPA 313. The contemporary Spanish novel.
- SPA 452** 4 (4,0)
Twentieth Century Spanish Literature: PR: SPA 313. Contemporary Spanish drama and poetry.
- SPA 481** 4 (4,0)
Stylistics: PR: SPA 301 or equivalent. An intense study of textural criticism. An examination of the relationship between language and literature; explications and linguistic analysis of literary texts.

SPEECH

- SPE 101** 3 (3,0) F,W,S,Su
Fundamentals of Oral Communication: Use of the body and voice; participation in various speaking situations; planning, organizing, and delivering public speeches.
- SPE 102** 1 (0,1) F,W,S,Su
Speech Improvement Laboratory: Individual and group practice for students with speech fright and delivery problems. Recommended for all students who want to improve their speaking skills.
- SPE 261** 5 (4,3) W,Su
English Phonetics and American Dialects: Physiological description and visual notation of speech sounds; regional dialects of American English.
- SPE 262** 4 (4,0) W
Psychology of Oral Communication: Psychological principles involved in the communicative process with application to individuals and groups.
- SPE 265** 4 (4,0) W
Voice and Articulation: PR: SPE 101. Introduction to the anatomy of voice and speech production. Analysis of voice and articulation of each student. Exercises for individual improvement.
- SPE 360** 4 (4,0) F
Argumentation and Debate: PR: SPE 101 or C.I. Study and practice in the preparation and delivery of argumentative speeches emphasizing argument, evidence and organization.
- SPE 361** 4 (4,0) W,Su
Persuasion: Motivation: PR: SPE 101 or C.I. A study of motivational factors involved in persuasive speaking to secure belief and action.
- SPE 362** 4 (4,0) S
Platform Speaking: PR: SPE 101 or C.I. Advanced training in selecting and organizing materials for various types of speeches. Practice in thinking and speaking before audiences; contemporary speeches as examples.
- SPE 364** 5 (5,2) F
Physiological Bases of Speech and Hearing: An introduction to the anatomical, physiological, and physical elements underlying the communication process.
- SPE 365** 2 (2,0) F,W
Parliamentary Procedure: Principles and rules governing participation and leadership in the conduct of formal business meetings.
- SPE 366** 4 (4,0) F
Speech Composition: PR: SPE 101 or C.I. Study and practice in the preparation and

delivery of speeches from manuscripts with emphasis on the development of oral style.

SPE 371 **3 (3,0) F,W,S**
Speech and Human Relations: Introduction to semantics; symbols and meaning and the relationship with human behavior.

SPE 473 **3 (3,0) W**
Directing Extracurricular Speech Activities: Debate, extemporaneous speech and other speech events; selection and training of contestants; interschool and intramural speech activities.

STATISTICS

STAT 201 **4 (4,0) F,W,S**
Principles of Statistics: Introduction to statistical concepts in modern society. Basic principles, frequency distributions, measures of location and dispersion, probability, probability distributions, statistical inference.

STAT 301 **4 (4,0) F,W,S**
Fundamentals of Probability and Statistics: PR: Four years of high school mathematics or MATH 106 or MATH 110 or equivalent. Course introducing probability and statistical inference including: estimation, hypothesis testing, binomial and normal distributions, small samples, regression and correlation.

STAT 332 **3 (3,0)**
Statistical Quality Control: Statistical concepts and methods applied to the control of quality of manufactured products. (Same as IEMS 332).

STAT 335 **3 (3,0)**
Probability and Statistics for Engineers: PR: MATH 323. Axioms of probability; combinatorial and geometrical probability; probability distributions; measures of location and dispersion; sampling and sampling distributions; estimation and tests of hypothesis; engineering applications. (Same as ENGR 371).

STAT 341 **4 (4,0) F**
Mathematical Statistics I: PR: MATH 323 and a course in statistics. Sample space, probability axioms, distribution functions, sampling distributions, interval estimation, hypothesis testing, multivariate normal, regression and correlation, linear models, analysis of variance, distribution-free methods.

STAT 342 **4 (4,0) W**
Mathematical Statistics II: PR: STAT 341. Continuation of STAT 341.

STAT 401 **4 (4,0) F**
Statistical Methods I: PR: One course in statistics or graduate standing. Statistics in research; methods of analyzing data; statistical concepts and models; estimation; tests of hypotheses; regression and correlation; analysis of variance and covariance; statistical design.

STAT 402 **4 (4,0) W**
Statistical Methods II: PR: STAT 401. A continuation of STAT 401.

STAT 411 **3 (3,0)**
Experimental Design: PR: STAT 402. Methods of constructing and analyzing designs for experimental investigations; concepts of blocking, randomization, and replication; confounding in factorial experiments; incomplete block designs.

- STAT 415** 4 (4,0)
Regression Analysis: PR: MATH 317 and STAT 401. Least squares techniques in multiple regression; matrix methods; general linear model; residual analysis; transformations; orthogonal polynomials; stepwise and stagewise procedures; non-linear estimation.
- STAT 421** 3 (3,0)
Survey Design: PR: STAT 402. Methods of constructing and analyzing designs for survey investigations; simple random, stratified, multistage, and multiphase sampling designs; questionnaire construction; methods of estimation; techniques of survey investigation.
- STAT 447** 3 (3,0)
Probability Theory and Applications: PR: MATH 324. Axioms of probability, discrete and continuous random variables, characteristic functions, Markov chains, recurrent events, sequences of random variables, random walk, simple stochastic processes.
- STAT 501** 3 (3,0)
Statistical Analysis: PR: A course in statistical methods and a course in mathematical statistics. This course relates the ideas of probability and statistics, including distribution theory, to the collection and analysis of data.
- STAT 535** 3 (3,0)
Probability for Engineers: PR: STAT 335. Engineering application of probability, combinatorial analysis, sample space, events, probability, discrete and continuous random variables, and probability distribution. (Same as IEMS 502).
- STAT 536** 3 (3,0)
Statistics for Engineers: PR: STAT 335. Engineering application of statistics, significance tests and confidence intervals, tests of hypotheses, simple and multiple regression and correlation. (Same as IEMS 503).
- STAT 547** 3 (3,0)
Applied Probability: PR: A course in mathematical statistics. Axioms of probability theory. Discrete random variables and probability distributions; Demoiivre-Laplace limit theorem; laws of large numbers; Markov chains; emphasis on applications.
- STAT 601** 3 (3,0)
Multivariate Statistical Methods: PR: STAT 501. The concepts of statistical relationships among several variables and methods of estimating and testing such relationships.
- STAT 621** 3 (3,0)
Spectral Analysis and Time Series Analysis: PR: STAT 547. Stochastic models for observations taken at discrete or continuous time points; methods of analysis for such data.
- STAT 631** 3 (3,0)
Biostatistics: PR: STAT 501. Models and methods of analysis for the quantal response in toxicity and morbidity experiments; statistical techniques for use in bioassay, carcinogenesis experiments and sensory tests.
- STAT 647** 3 (3,0)
Probability and Statistics: PR: STAT 547. Probability and measure theory; distributions of continuous random variables; characteristic functions; sequences and sums of random variables; the central limit problem.

T

THEATRE

- THA 180** 3 (3,0) F,S
Study of Drama and Theatre: Nature of drama and the theatre and basic principles of play analysis.
- THA 210** 4 (4,0) W,Su
Cinema Survey: A broad cultural approach to cinema as theatre. Satisfies Section II, Cultural and Historical Foundations, in the Environmental Studies Program.
- THA 230** 3 (3,0) F,W,S
Interpretation I: Analysis of thought; development of imagination; oral presentation of literary forms. (Recommended for students majoring in English and preparing to teach literature).
- THA 240** 4 (4,0) W
Technical Theatre Production: History, theory, and practice of technical theatre production.
- THA 241** 4 (2,4) W
Stage Carpentry: Special approaches to construction, painting, rigging, and operation of stage scenery.
- THA 242** 4 (2,4) S
Stage Properties: Design, construction, operation, and management of stage properties. History, style, and decoration of practical, scenic, and hand properties.
- THA 280** 4 (4,0)
Acting I: Prepares the beginning actor for University Theatre productions. Emphasis on movement, motivation, voice, characterizational techniques, makeup, and other basic requirements for acting.
- THA 290** 3 (0,15) F,W,S,Su
Theatre Practicum I: PR: C.I. Open to all students interested in participating in productions of University Theatre. May be repeated for credit.
- THA 310** 4 (4,0) F
History of the Motion Picture: Development of the film industry; its social and economic impact. (Same as COM 310).
- THA 330** 3 (3,0)
Interpretation II: PR: THA 230 or C.I. Selecting and abridging literary material for platform use; preparation and presentation of program for special and general occasions.
- THA 331** 3 (3,0)
Theatre History I: Development of theatre art from the earliest times through the sixteenth century.
- THA 332** 3 (3,0)
Theatre History II: Development of theatre art from the Renaissance through the neo-classic period to the beginning of the Romantic Period.
- THA 333** 3 (3,0)
Theatre History III: Development of theatre art from the Romantic Period to the modern theatre.

- THA 335** 3 (3,0)
Oral Interpretation for Performance: PR: THA 230. The application of interpretation techniques to Readers Theatre and Chamber Theatre productions. Some public performances required.
- THA 336** 3 (3,0)
Oral Interpretation III: PR: THA 230. A study of the theories and practice in the techniques of interpretation, with particular emphasis on reading for children.
- THA 341** 4 (4,0)
Drama Development I: A study of dramatic works in translation of the Greeks, Roman, and Medieval Theatre. Extensive readings in the plays of these periods should be expected.
- THA 342** 4 (4,0)
Drama Development II: A study of dramatic works in translation of the 16th and 17th centuries. Continuation of THA 341.
- THA 343** 4 (4,0)
Drama Development III: Continuation of THA 341-342 tracing the development of dramatic works in translation of the 18th and 19th centuries.
- THA 350** 4 (4,0)
Theatrical Costume: History and Theory: Historical costume for theatre purposes; period costumes in relation to social and cultural development. Fabric, silhouette, color and decoration as related to theatrical characterizations.
- THA 351** 4 (2,2)
Costume and Makeup Techniques: Analysis, design, construction, and management of costume and makeup in the theatre.
- THA 375** 4 (3,2)
Modern Stage Movement: Modern movement patterns, analysis, improvisation, and exercise to improve the flexibility and control of the actor's physical means of expression.
- THA 380** 3 (3,0)
Directing I: Fundamental principles of play-directing; demonstrations of theory in group exercises. Each student is required to direct two short scenes for laboratory presentation and criticism.
- THA 381** 4 (4,0)
Scene Design I: Study and practice of scene design; perspective drawing, fundamentals of design, and techniques of scene painting. (Service on crew as required).
- THA 382** 4 (4,0)
Stage Lighting: PR: Junior standing. Study of stage lighting techniques, practices, and equipment. (Service on light is required).
- THA 390** 3 (0,15)
Theatre Practicum II: PR: THA 290 or C.I. Primarily an activity course. Student will serve in some position of responsibility in production. May be repeated for credit.
- THA 422** 4 (4,0)
High School Play Directing: Introduction to the theory and practice of directing and producing, with particular emphasis upon methods practicable in high school and junior college play production.
- THA 423** 3 (3,0)
Contemporary Theatre and Drama: Trends in theatrical production and dramatic literature in

Italy, France, Germany, Russia, and the Scandinavian countries.

THA 424 **4 (4,0)**

Principles of Motion Picture Art: PR: THA 310 or C.I. Aesthetic consideration of the motion picture as art, through the viewing of films, reading assignments, and discussion.

THA 425 **3 (3,0)**

Dramatic Criticism: PR: C.I. Analysis of the nature of past and present day criticism of the drama; practical work in such criticism.

THA 431 **3 (3,0)**

Modern Theatre Forms: Modern and historical aesthetic analysis of theatre forms; theatrical experience related to playwriting, interpretation, performance, audience response. Theorists studies: Appia, Craig, Artaud, Grotowsky and Knott.

THA 434 **4 (4,0)**

Modern Motion Picture Technique: PR: THA 310 or C.I. An examination of the techniques of motion picture as art; directing, acting, editing, writing, cinematography.

THA 441 **4 (4,0)**

Modern Currents in the Theatre: Recent trends in the development of theatre: constructs, production, and design. Study of new theatres: "Happenings," environments, "guerrilla," "street" theatres, other departures from conventional modes.

THA 486 **3 (3,0)**

American Theatre and Drama: 18th and 19th Centuries: An examination of the influences on the American drama and theatre. Trends in theatrical production and dramatic types.

THA 487 **3 (3,0)**

American Theatre: 20th Century: A continuation of THA 486, with emphasis placed upon the aesthetic and literary development of the theatre in this century.

THA 488 **3 (3,0)**

Creative Dramatics and Children's Theatre: An introduction to the bases of theatre production for and by young people. The production of children's theatre, play selection, scenery, costumes, management, and touring.

THA 489 **3 (3,0)**

Studies in Oral Interpretations: PR: THA 230. Individual oral reading projects; an intensive study of the literature for interpretation.

Z

ZOOLOGY

ZOOL 100

4 (3,4) W,S

General Zoology: Introduction to zoology; structure, function and representative groups; current concepts in zoological sciences.

ZOOL 322

4 (2,6)

Vertebrate Histology: PR: ZOOL 100. Anatomy, structure and function of major cell types and tissues.

ZOOL 324

5 (3,4) F,W

Human Anatomy: PR: BIOL 110 or equivalent. Structure of the human body. Not open to students in ZOOL 326, ZOOL 327 or equivalent.

ZOOL 326

4 (2,6) F

Comparative Vertebrate Anatomy: PR: ZOOL 100. The vertebrate animals; relationship of organs and systems; and their phylogenetic significance.

ZOOL 327

4 (2,6) W

Comparative Vertebrate Anatomy: PR: ZOOL 326. Continuation of ZOOL 326.

ZOOL 330

5 (3,6)

Animal Physiology: PR: BIOL 332 or C.I. Functions of body processes occurring in animals with emphasis on vertebrate physiology.

ZOOL 334

5 (4,3) W

Human Physiology: PR: BIOL 110 or equivalent. The physiology and interrelationships of organ systems of the human body.

ZOOL 340

4 (2,6) S

Vertebrate Zoology: PR: 8 hours of zoology or C.I. Emphasis on evolution and classification followed by an introduction to vertebrate ecology, natural history and behavior.

ZOOL 345

4 (3,3)

General Entomology: PR: ZOOL 100. Introduction to insects; their identification, biology and ecology.

ZOOL 370

5 (3,6)

Animal Parasitology: PR: ZOOL 100. Identification and life histories of representative parasitic protozoa and helminths emphasizing host-parasite relationships; techniques of animal examination.

ZOOL 423

5 (3,6) S

Embryology: PR: 12 hours of biology. Embryology of the vertebrates; fertilization of egg; stages of cleavage; development of organs and systems.

ZOOL 442

5 (3,6) F

Invertebrate Zoology: PR: 12 hours of biology or C.I. Taxonomy, anatomy and ecology of the invertebrate animals.

ZOOL 445

4 (2,6)

Ichthyology: PR: 8 hours of zoology or C.I. Introduction to the biology of the fishes, their classification, evolution and life histories.

- ZOOL 453** 3 (3,0) W
Zoogeography: PR: BIOL 350 or C.I. Principles and concepts concerning regional patterns of distribution of the animals of the world, both past and present.
- ZOOL 475** 4 (3,3)
Vertebrate Ethology: PR: ZOOL 100. Classical ethology, modern experimental ethology and behavioral ecology are considered.
- ZOOL 537** 3 (3,3)
Endocrinology: PR: ZOOL 330 and CHEM 441 or C.I. Mechanisms of action of hormones; interrelationships between the nervous and endocrine systems.
- ZOOL 544** 4 (2,6)
Ornithology: PR: 8 hours of zoology or C.I. Introduction to the biology of birds, their classification, evolution and life histories.
- ZOOL 545** 4 (2,6)
Biology of Fishes: PR: 8 hours of zoology or C.I. Introduction to the biology of the fishes, their classification, evolution and life histories. Special project required.
- ZOOL 546** 4 (2,6)
Herpetology: PR: 8 hours of zoology or C.I. Introduction to the biology of the amphibians and reptiles, their classification, evolution and life histories.
- ZOOL 547** 4 (2,6)
Field Zoology: PR: 12 hours in biological sciences, or science teaching experience or C.I. Classification and identification among major animal groups with emphasis on field experience. Major reference sources reviewed.
- ZOOL 548** 4 (2,6)
Mammalogy: PR: 8 hours of zoology or C.I. Introduction to the biology of mammals, their classification, evolution and life histories.
- ZOOL 553** 3 (3,0)
Animal Distribution: PR: BIOL 350. Principles and concepts concerning regional patterns of distribution of the animals of the world, both past and present. Special project required.
- ZOOL 558** 4 (2,6)
Fishery Biology: PR: BIOL 450 and ZOOL 445. The biology and management of important commercial and game fishes; case histories of selected fisheries and analysis of methodology.
- ZOOL 572** 3 (3,0)
Principles of Zoological Systematics: PR: BIOL 460 and 15 hours of zoology courses of 300 level or above. Theory and practice of taxonomy and classification of animals; introduction to the International Code of Zoological Nomenclature.
- ZOOL 576** 5 (3,6)
Aquatic Invertebrates: PR: ZOOL 442 or C.I. A faunistic survey of major invertebrate groups associated with aquatic environments in Florida.
- ZOOL 632** 5 (3,6)
Comparative Animal Physiology: PR: CHEM 441 or C.I. Functional adaptations to physiological stresses developed in exploitation of diverse habitats.

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